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MASSACHIUSETTS FACTS BOOK

Massachusetts Department of Commerce & Development | Leverett Saltonstall Building | 100 Cambridge Street | Government Center Boston, Massachusetts 02202 |

COLLECTION

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Education, Research & Training

Colleges & Universities
Schools Offering State Funded
Occupational Education Programs
Research
Massachusetts Employer Training
Assistance (META)
On-the-Job Training (OJT)
Skills Training Improvement
Program (STIP)
Skills Center Training

Financing

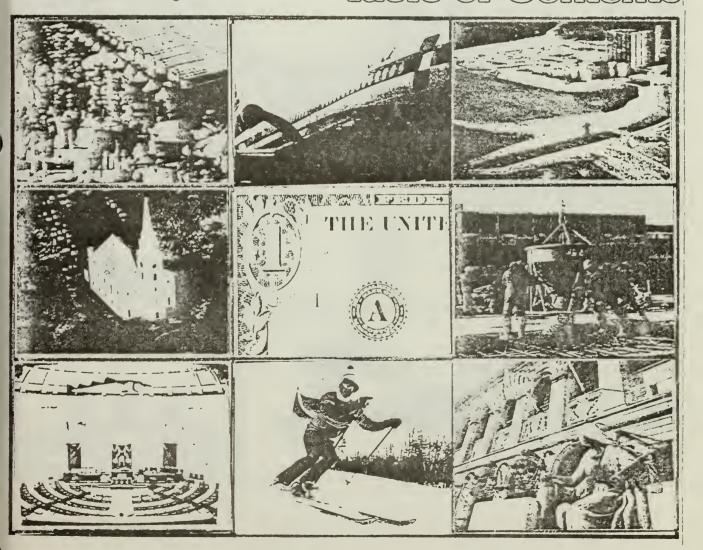
Massachusetts Industrial Revenue Bond Financing Plan Massachusetts Industrial Mortgage Insurance Agency (MIMIA) Community Development Finance Corporation (CDFC) Massachusetts Business Development Corporation (MBDC) Massachusetts Capital Resource Company (MCRC) Small Business Administration (SBA) Economic Development Administration (EDA) Farmers Home Administration (FmHA) Business and Industrial Loans

Taxes & Tax Incentives Transportation

Highway Rail Air Water Mass Transit

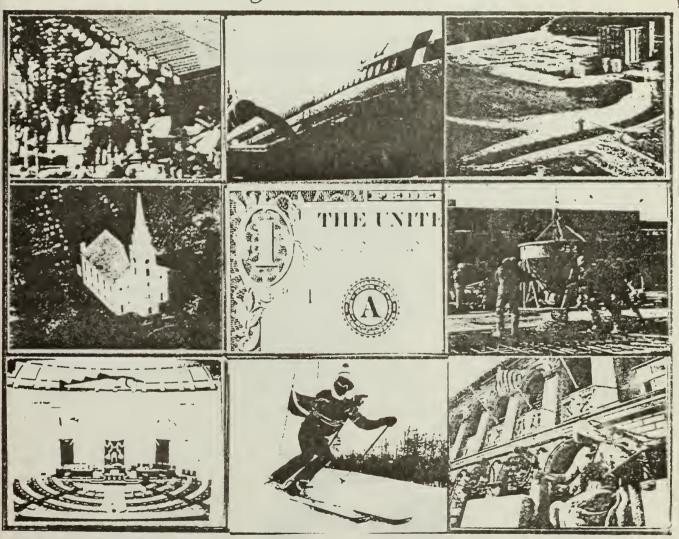
Energy Livability

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Physical Characteristics





Physical Characteristics

Topography

Massachusetts occupies a total land area of 7,867 square miles (20,375 square Kilometers). Its extreme breadth is 160 miles (257 kilometers) and its length varies from 47 to 90 miles (75 to 145 kilometers).

The state can be divided into seven major physical regions:

- Cape Cod—flat, nearly at sea level, with many lake or pond filled depressions.
- Boston Basin gentle contour with tear-drop shaped hills (drumlins) below 250 feet (75 meters).
- 3. Seaboard Lowland—flat to gently rolling with 1,000 to 2,000 foot (300 to 600 meter) elevations.
- New England Upland rolling to hilly plateau, largest of the regions.
- 5. Lower Connecticut Valley—flat to gently rolling with less than 100 to 400 foot (30 to 120 meter) elevations.
- 6. Berkshire Hills—rough rolling upland for a general elevation of 2,000 feet (600 meters).

 Green Mountains and Foothills rugged and mountainous with 1,500 to 3,000 foot (450 to 900 meter) elevations.

The land surface has 24 drainage basins: along the east coast, Parker, Ipswich, Mystic, Charles, Neponset, Weymouth, Taunton and Ten Mile; for eastern and central Massachusetts, the Merrimack (with its tributaries Assabet, Concord, Nashua, Shawsheen and Sudbury) and Blackstone; for central and western Massachusetts, the Connecticut (with its tributaries Chicopee, Deerfield, Farmington, Millers and Westfield) and French Quinebaug; and for western Massachusetts, Hoosic and Housatonic.

Massachusetts has 1,980 miles (3,186 kilometers) of tidal shoreline.

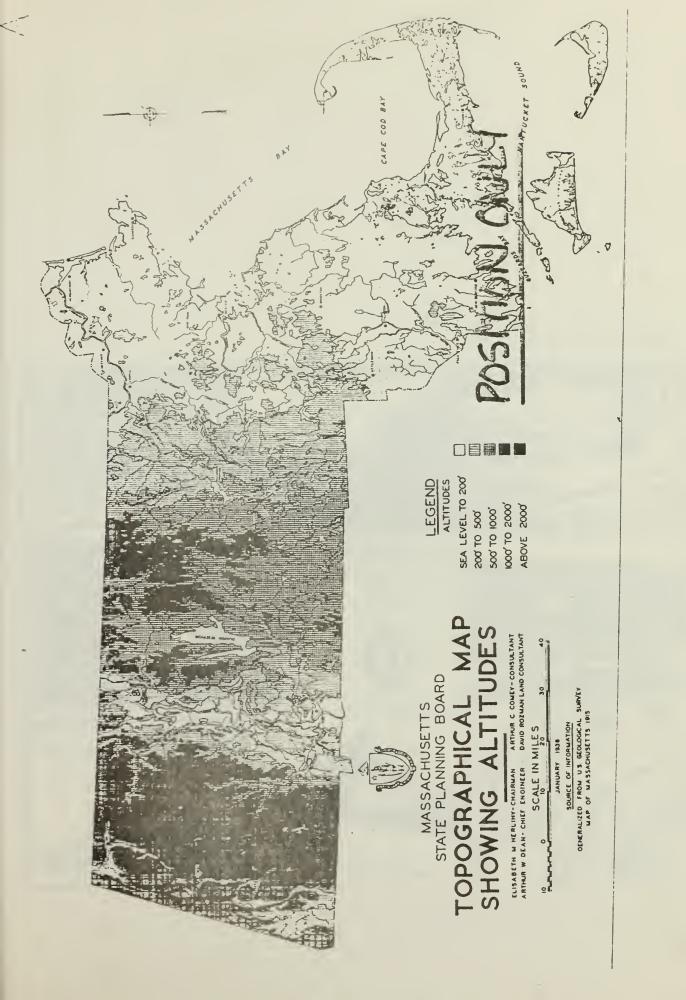


Climate

The average annual precipitation in Massachusetts is 44.23 inches (112.34 centimeters). Rainfall may vary from about 30 inches (75 centimeters) in a dry year (well above the national average of 23 inches (60 centimeters) to as much as 60 inches (150 centimeters). Much of this precipitation is contained some 254 square miles (658 square kilometers) of water surface, which includes 1,215 great ponds, natural ponds with areas greater than 10 acres (4 hectares). Rainfall also flows in from Vermont and New Hampshire, mostly in the Connecticut and Merrimack river basins.

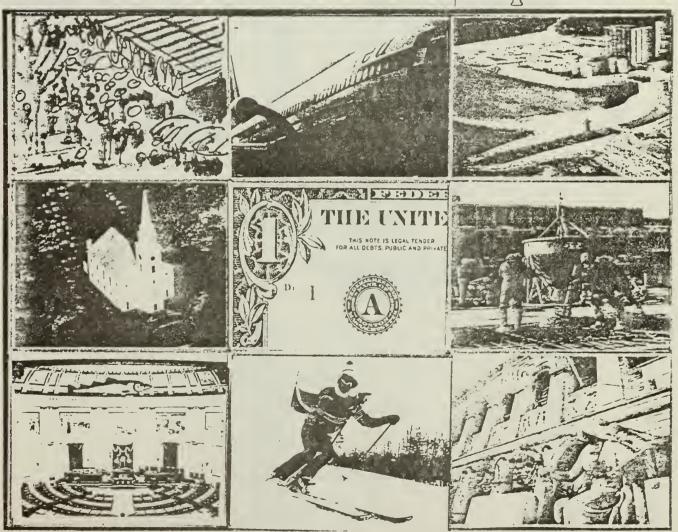
Average monthly temperatures in Boston range from $28.9^{\circ}F$ ($-1.7^{\circ}C$) in January to $72.6^{\circ}F$ ($22.6^{\circ}C$) in July, with an annual mean of $50.3^{\circ}F$ ($10.2^{\circ}C$).







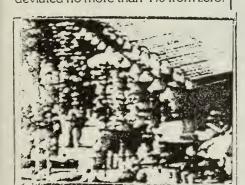
Population





In its large and accessible population, Massachusetts enjoys a particularly well-educated and skilled resource. The Commonwealth's progressive educational system insures a continued supply of talented and adaptable workers. Often, residents of other states who come to Massachusetts to attend its colleges and universities choose to remain in the Commonwealth after their schooling has been completed.

Massachusetts has one of the country's most stable populations: over the last four decades, migration has deviated no more than 4% from zero.



AGE COMPOSITION, 1975

| Age Group | Number of Inhabitants | Percent of Total |
|---------------|-----------------------|------------------|
| 0.4 | 433,000 | 7.3% |
| 5-9 | 468,000 | 7.9 |
| 10-14 | 551,000 | 9.3 |
| 15-19 | 584,000 | 9.9 |
| 20-24 | 519,000 | 88 |
| 25-29 | 484,000 | 8.2 |
| 30-34 | 374,000 | 6.3 |
| 35-39 | 296,000 | 5.0 |
| 40-44 | 295,000 | 5.0 |
| 45-49 | 324,000 | 5.5 |
| 50-54 | 331,000 | 5.6 |
| 55-59 | 309,000 | 5.2 |
| 60-64 | 266,000 | 4.5 |
| 65-69 | 223,000 | 3.8 |
| 70-74 | 172,000 | 2.9 |
| 7 5-79 | 131,000 | 2.2 |
| 80+ | 145,000 | 2.5 |
| Total | 5,904,000 | 99.9% |

^{*}Figures based on Massachusetts Office of State Planning estimates. Percentages do not add due to rounding.

Population

NUMBER OF INHABITANTS

| Year | Number | Ratio to 1975 |
|--------|-----------|---------------|
| 1950 | 4.690,514 | 79.4 |
| 1955 | 4,837,645 | 81.9 |
| 1960 | 5,149,834 | 87.2 |
| 1965 | 5,295,281 | 89.7 |
| 1970 | 5,689,170 | 96.4 |
| 1975* | 5,904,000 | 100.0 |
| 1980** | 6,046,000 | 102.4 |
| 1985** | 6,208,000 | 105.1 |
| 1990** | 6,388,000 | 108.1 |
| 1995** | 6,542,000 | 110.8 |
| 2000** | 6,668,000 | 112.9 |
| | | |

Office of State Planning estimate.

POPULATION OF STANDARD METROPOLITAN STATISTICAL AREAS (SMSA'S), 1970

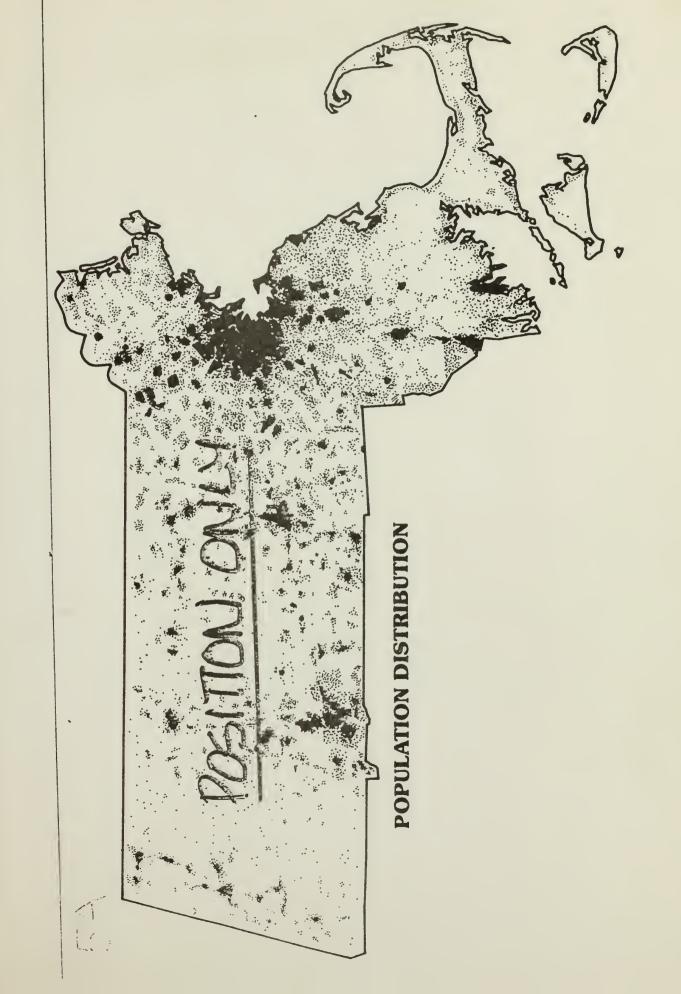
| SMSA | Number of Massachusetts Inhabitants | Percent of Total |
|---|---|---------------------|
| Boston | 2,753,700 | 48.4% |
| Brockton | 189,820 | 3.3 |
| Fall River, MassR.I. | 137,417* | 2.4 |
| Fitchburg-Leominster | 97,164 | 1.7 |
| Lawrence-Haverhill, MassN.H. | 205,641* | 3.6 |
| Lowell | 212,860 | 3.7 |
| New Bedford | 152,642 | 2.7 |
| Pittsfield | 79,727 | 1.4 |
| Providence-Pawtucket-Warwick, R.IMass. | 121,595 | 2.1 |
| Springfield-Chicopee-Holyoke, MassConn. | 523,029° | 9.2 |
| Worcester | 344,320 | 6.1 |
| Inside SMSA's, Total | 4,817,915 | 84.6 |
| Outside SMSA's | 871,255 | 15.3 |
| Total | 5,689,170 | 99.9% |

^{*}Massachusetts Inhabitants only. Percentages do not add due to rounding.

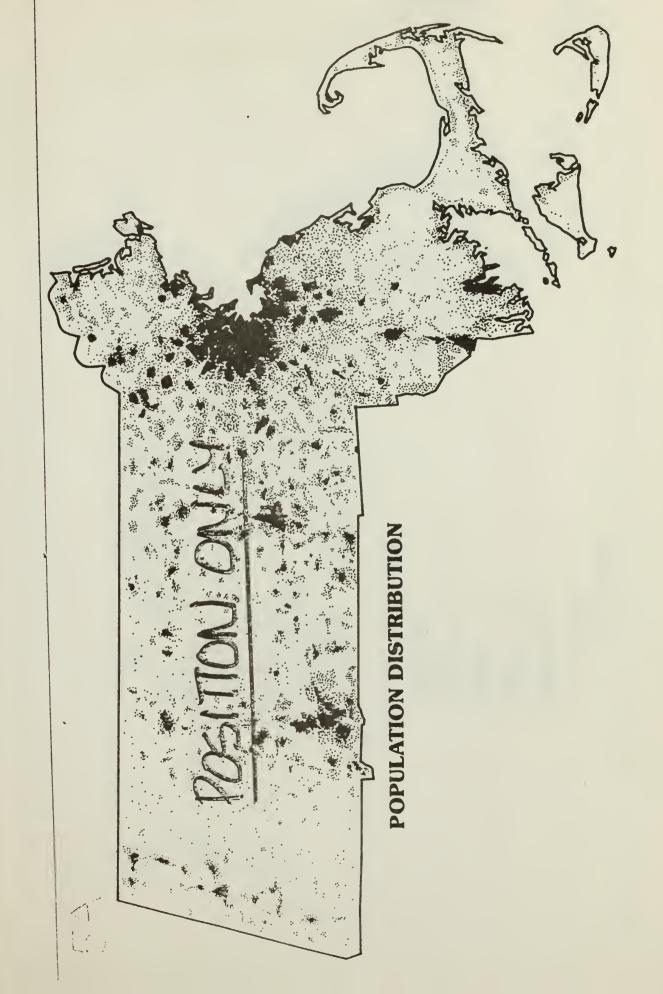
^{**}Office of State Planning projection.

Source: U.S. Department of Commerce, Bureau of the Census, U.S. Census of Population; 1970, Number of Inhabitants.

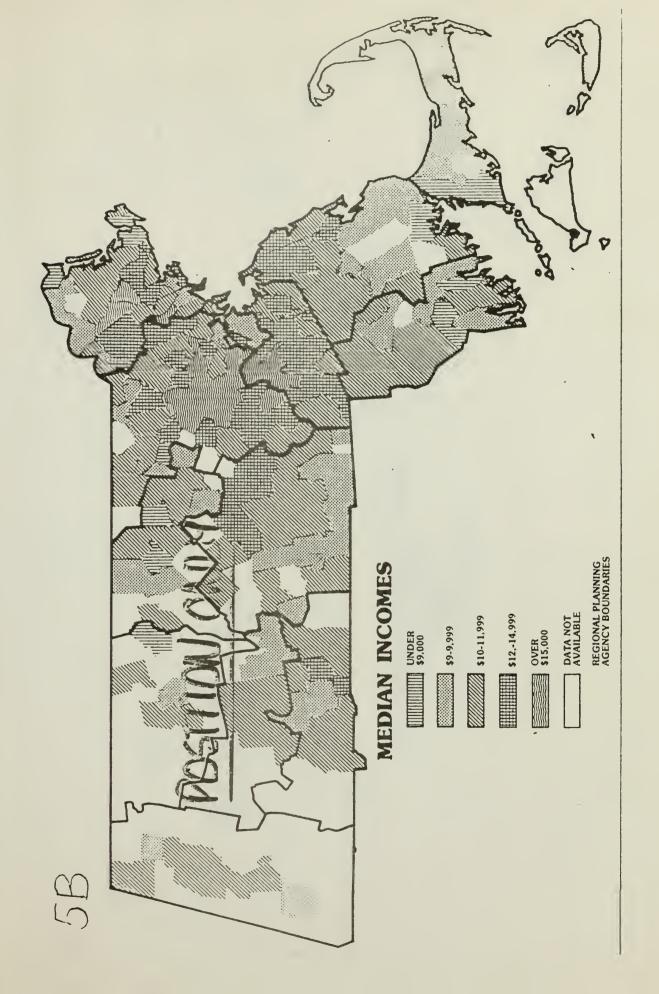




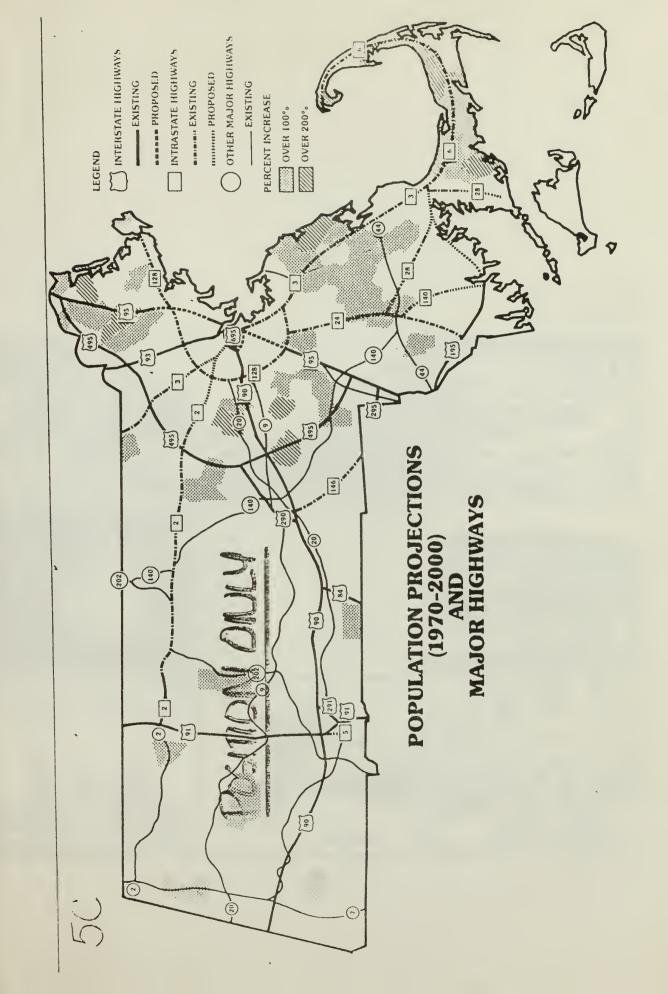






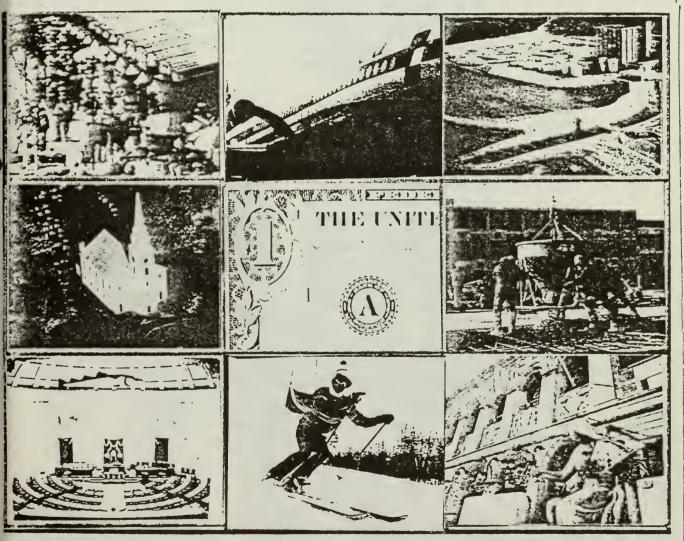








Labor

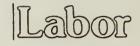


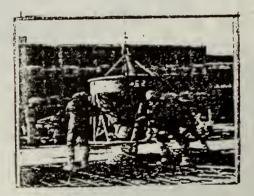
Massachusetts' labor force is one of its major economic assets. The commonwealth's advantage is particularly great in the area of skilled and semi-skilled workers, where the supply is ample for nearly every kind of manufacturing or business enterorise.

Massachusetts workers have long been recognized as among the most competent and productive in the United States. The following statistics show that they are highly educated, cost-competitive and extremely stable as well.

Educational Level

Massachusetts' work force is noted for its high level of educational attainment. For instance, almost 29% of the employed population over 16 years of age have had some college education, compared with a national average of just over 26%. In 10 of the 12 major occupational categories identified below, the proportion of the Massachusetts work force with some college exceeds the national average, often by a substantial marqin.





EMPLOYED PERSONS 16 YEARS OLD AND OVER, TOTAL

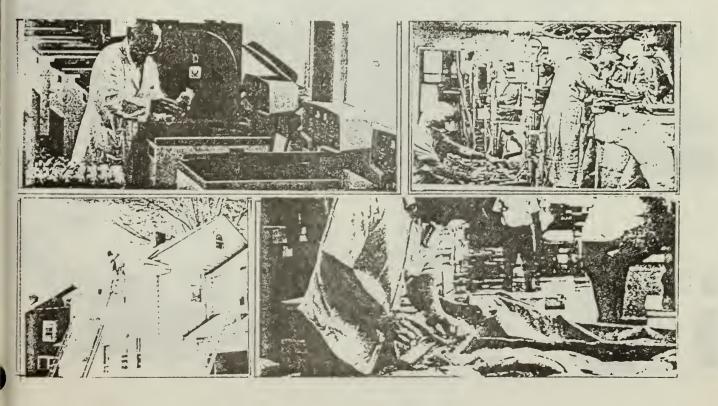
| Educational Level | Number in Massachusetts | Percent of Total | Number in U.S. | Percent of Total |
|--|----------------------------|---------------------|----------------|---------------------|
| Completed elementary school, 8 years or less | 330,102 | 14.36% | 13,544,074 | 17.69% |
| Completed high school, 1 to 3 yrs. | 466,727 | 20.31 | 16,051,558 | 20.97 |
| Completed high school, 4 years | 836,340 | 36.39 | 26,937,857 | 35.19 |
| Completed college, 1 to 3 years | 326,687 | 14.22 | 10,252,035 | 13.39 |
| Completed college, 4 yrs. or more | 338,313 | 14.72 | 9,768,075 | 12.76 |
| Total | 2,298,169 | 100.00% | 76,553,599 | 100.00% |

PROFESSIONAL, TECHNICAL & KINDRED WORKERS

| Educational Level | Number in Massachusetts | Percent of Total | Number in U.S. | Percent of Total |
|--|----------------------------|---------------------|-------------------|---------------------|
| Completed elementary school, 8 years or less | 5,286 | 1.32% | 207,424 | 1.83% |
| Completed high school, 1 to 3 years | 14,755 | 3.69 | 499,071 | 4.40 |
| Completed high school, 4 years | 72,682 | 18.16 | 1,983,930 | 17.48 |
| Completed college, 1 to 3 years | 88,168 | 22.03 | 2,329,468 | 20.52 |
| Completed college, 4 years or more | 219,282 | 54.80 | 6,331,245 | 55.78 |
| Total | 400,173 | 100.00% | 11,351,138 | 100.01% |

MANAGERS AND ADMINISTRATORS, EXCEPT FARM

| Educational Level | Number in Massachusetts | Percent of Total | Number in U.S. | Percent of Total |
|--|----------------------------|------------------|-------------------|---------------------|
| Completed elementary school, 8 years or less | 11,949 | 6.21% | 567,082 | 8.90% |
| Completed high school, 1 to 3 years | 22,504 | 11.70 | 873,369 | ' 13.71 |
| Completed high school, 4 years | 65,593 | 34.10 | 2,174,738 | 34.13 |
| Completed college, 1 to 3 years | 37,982 | 19.75 | 1,269,045 | 19.92 |
| Completed college, 4 years or more | 54,308 | 28.24 | 1,486,915 | 23.34 |
| Total | 192,336 | 100.00% | 6,371,149 | 100.00% |

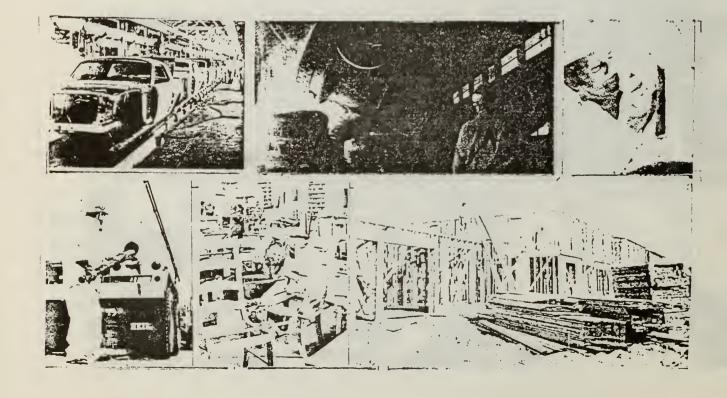


SALES WORKERS

| Educational Level | Number in Massachusetts | Percent of Total | Number in U.S. | Percent of Total |
|--|----------------------------|---------------------|----------------|---------------------|
| Completed elementary school, 8 years or less | 11,998 | 7.43% | 516,318 | 9.48% |
| Completed high school, 1 to 3 years | 36,208 | 22.43 | 1,170,771 | 21.50 |
| Completed high school, 4 years | 62,462 | 38.69 | 2,082,433 | 38.24 |
| Completed college, 1 to 3 years | 28,461 | 17.63 | 1,033,706 | 18.98 |
| Completed college, 4 years or more | 22,333 | 13.83 | 642,146 | 11.79 |
| Total | 161,462 | 100.00% | 5,445,374 | 99.99% |

CLERICAL AND KINDRED WORKERS

| Educational Level | Number in Massachusetts | Percent of Total | Number in U.S. | Percent of Total |
|--|----------------------------|---------------------|-------------------|---------------------|
| Completed elementary school, 8 years or less | 18,875 | 4.12% | 699,242 | 5.09% |
| Completed high school, 1 to 3 years | 70.911 | 15.49 | 2,194,996 | 15.97 |
| Completed high school, 4 years | 251,087 | 54.83 | 7,441,079 | 54.12 |
| Completed college, 1 to 3 years | 91,443 | 19.97 | 2,709,029 | 19.70 |
| Completed college, 4 years or more | 25,584 | 5.59 | 703,914 | 5.12 |
| Total | 457,900 | 100.00% | 13,748,260 | 100.00% |

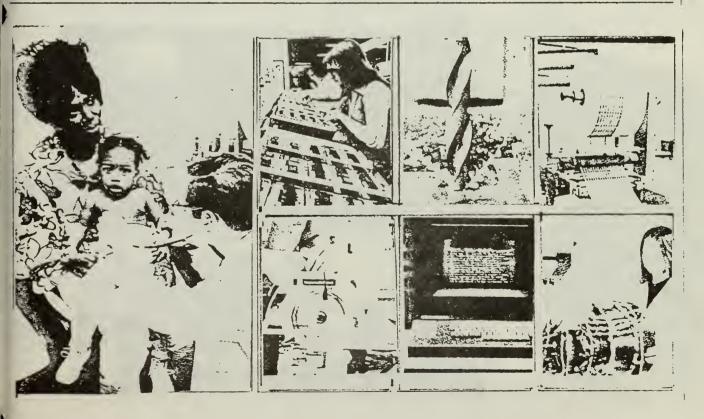


CRAFTSMEN AND KINDRED WORKERS

| Educational Level | Number in Massachusetts | Percent of Total | Number in U.S. | Percent of Total |
|--|----------------------------|---------------------|-------------------|---------------------|
| Completed elementary school, 8 years or less | 61,097 | 20.27% | 2,499,483 | 23.56% |
| Completed high school, 1 to 3 years | 77,671 | 25.77 | 2,724,703 | 25.68 |
| Completed high school, 4 years | 131,005 | 43.47 | 4,222,236 | 39.80 |
| Completed college, 1 to 3 years | 25,252 | 8.38 | 933,315 | 8.80 |
| Completed college, 4 years or more | 6,343 | 2.10 | 229,893 | 2.17 |
| Total | 301,368 | 99.99% | 10,609,630 | 100.01% |

OPERATIVES, EXCEPT TRANSPORT

| Educational Level | Number in Massachusetts | Percent of Total | Number in U.S. | Percent of Total |
|--|----------------------------|---------------------|-------------------|---------------------|
| Completed elementary school, 8 years or less | 116,103 | 34.69% | 3,203,729 | 30.52% |
| Completed high school, 1 to 3 years | 101,637 | 30.37 | 3,178,242 | 30.27 |
| Completed high school, 4 years | 100,763 | 30.11 | 3,515,069 | 33.48 |
| Completed college, 1 to 3 years | 13,651 | 4.08 | 517,544 | 4.93 |
| Completed college, 4 years or more | 2,528 | .76 | 83,941 | .80 |
| Total | 334,682 | 100.01% | 10,498,525 | 100.00% |



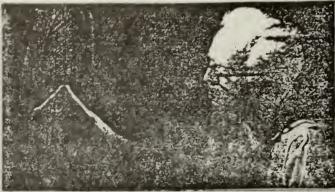
TRANSPORT EQUIPMENT OPERATIVES

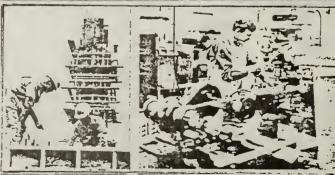
| Educational Level | Number in Massachusetts | Percent of Total | Number in U.S. | Percent of Total |
|--|----------------------------|---------------------|-------------------|---------------------|
| Completed elementary school, 8 years or less | 16,513 | 23.66% | 866,284 | 29.29% |
| Completed high school, 1 to 3 years | 22,818 | 32.69 | 917,872 | 31.03 |
| Completed high school, 4 years | 25,194 | 36.10 | 959,355 | 32.43 |
| Completed college, 1 to 3 years | 4,438 | 6.36 | 186,896 | 6.32 |
| Completed college, 4 years or more | 829 | 1.19 | 27,528 | .93 |
| Total | 69,792 | 100.00% | 2,957,935 | 100.00% |

LABORERS, EXCEPT FARM

| Educational Level | Number in Massachusetts | Percent of Total | Number in U.S. | Percent of Total |
|--|----------------------------|---------------------|----------------|---------------------|
| Completed elementary school, 8 years or less | 22,664 | 28.01% | 1,177,325 | 34.31% |
| Completed high school, 1 to 3 years | 29,160 | 36.04 | 1,093,629 | 31.87 |
| Completed high school, 4 years | 22,105 | 27.32 | 895,750 | 26.11 |
| Completed college, 1 to 3 years | 6,015 | 7.43 | 228,807 | 6.67 |
| Completed college, 4 years or more | 972 | 1.20 | 35,771 | 1.04 |
| Total | 80,916 | 100.00% | 3,431,282 | 100.00% |







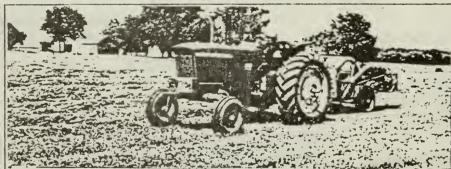
FARMERS AND FARM MANAGERS

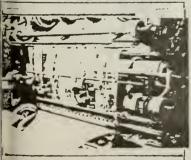
| iducational Level | Number in Massachusetts | Percent of Total | Number in U.S. | Percent of Total |
|--|----------------------------|---------------------|-------------------|---------------------|
| Completed elementary school, 8 years or less | 1,313 | 25.24% | 562,523 | 39.65% |
| Completed high school, 1 to 3 years | 1,126 | 21.65 | 238,543 | 16.81 |
| Completed high school, 4 years | 1,742 | 33.49 | 456,500 | 32.18 |
| Completed college, 1 to 3 years | 651 | 12.51 | 106,736 | 7.52 |
| Completed college, 4 years or more | 370 | 7.11 | 54,444 | 3.84 |
| Total | 5,202 | 100.00% | 1,418,746 | 100.00% |

FARM LABORERS AND FARM FOREMEN

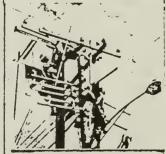
| iducational Level | Number in Massachusetts | Percent of Total | Number in U.S. | Percent of Total |
|--|----------------------------|------------------|----------------|---------------------|
| Completed elementary school, 8 years or less | 1,778 | 28.85% | 476,308 | 50.23% |
| Completed high school, 1 to 3 years | 2,109 | 34.23 | 234,447 | 24.72 |
| ompleted high school, 4 years | 1,440 | 23.37 | 173,644 | 18.31 |
| completed college, 1 to 3 years | ['] 630 | 10.22 | 50,344 | 5.31 |
| ompleted college, 4 years or more | 205 | 3.33 | 13,566 | 1.43 |
| Total | 6,162 | 100.00% | 948,309 | 100.00% |











SERVICE WORKERS, EXCEPT PRIVATE HOUSEHOLD

| Educational Level | Number in Massachusetts | Percent of Total | Number in U.S. | Percent of Total |
|--|----------------------------|---------------------|-------------------|---------------------|
| Completed elementary school, 8 years or less | 56,958 | 20.87% | 2,190,975 | 25.40% |
| Completed high school, 1 to 3 years | 83,313 | 30.52 | 2,606,986 | 30.22 |
| Completed high school, 4 years | 98,457 | 36.07 | 2,833,156 | 32.84 |
| Completed college, 1 to 3 years | 28,930 | 10.60 | 846,446 | 9.81 |
| Completed college, 4 years or more | 5,291 | 1.94 | 149,797 | 1.74 |
| Total | 272,949 | 100.00% | 8,627,360 | 100.01% |

PRIVATE HOUSEHOLD WORKERS

| Educational Level | Number in Massachusetts | Percent of Total | Number in U.S. | Percent of Total |
|--|----------------------------|------------------|----------------|---------------------|
| Completed elementary school, 8 years or less | 5,568 | 36.57% | 577,381 | 50.39% |
| Completed high school, 1 to 3 years | 4,515 | 29.65 | 318,929 | 27.83 |
| Completed high school, 4 years | 3,810 | 25.02 | 199,967 | 17.45 |
| Completed college, 1 to 3 years | 1,066 | 7.00 | 40,699 | 3.55 |
| Completed college, 4 years or more | 268 | 1.76 | 8,915 | .78 |
| Total | 15,227 | 100.00% | 1,145,891 | 100.00% |

Percentages may not add due to rounding.

Source: U.S. Department of Commerce, Bureau of the Census, U.S. Census of Population: 1970, Detailed Characteristics, United States Summary U.S. Department of Commerce, Bureau of the Census, U.S. Census of Population: 1970, Detailed Characteristics, Massachusetts

Wages,

Wage rates in Massachusetts are competitive and often below the prevailing levels of other industrial states. Massachusetts average weekly manufacturing earnings of \$190.16 are 8.4% below the U.S. average of \$207.60.

Work Stoppages

Massachusetts benefits from an excellent labor relations climate. As of 1974, 26.6% of the Commonwealth's non-agricultural employees were unionized, compared with a U.S. average of 29.9%. In almost every major industry group, the number of days lost due to strikes in Massachusetts is disproportionately low, relative to the state's share of the nation's work force employed in that group.

AVERAGE WEEKLY MANUFACTURING EARNINGS IN MAJOR INDUSTRIAL STATES, 1976

| MASSACHUSETTS | \$190.16 |
|---------------|----------|
| Texas | 204.18 |
| New York | 207.64 |
| Connecticut | 208.90 |
| Pennsylvania | 210.11 |
| New Jersey | 215.67 |
| California | 221.92 |
| Illinois | 233.99 |
| Ohio | 252.54 |
| Michigan | 290.97 |
| | |

Source: U.S. Department of Labor, Bureau of Labor Statistics, Employment & Earnings. Vol. 24, #9 (Sept. 1977).

| | | | | | inassacia. | Pane Idle |
|--|---------------------------------------|-----------------------------------|--|---|-------------------------|---|
| | | | Number of | Number of | ployment | in Massa- |
| Industry Group | Number of Employees in Massa-chusetts | Number of Employees in U.S. | Due to Strikes in Massa- chusetts | Days Idle Due to Strikes in U.S. | centage of U.S. Employ. | Percentage of Number of Days Idle in U.S. |
| 1 Non Acricultural Employment Total Except | | | | | | |
| | 1 958 500 | 62 212 200 | 786,800 | 29,032,600 | 3.1% | 2.7% |
| 2. Manufacturing. Total | 593,800 | 18.347.000 | 391.800 | 14.876.100 | 3.2 | 2.6 |
| 3 Ordnance & Accessories (SIC 19) | 20,600 | 170,600 | | 193.700 | 12.1 |) 1 |
| 4. Food & Kindred Products (SIC 20) | 30,100 | 1,676,400 | 11,500 | 838,400 | 1.8 | 1.4 |
| 5. Textile Mill Products (SIC 22) | 25,700 | 901,500 | 5,800 | 27,300 | 2.9 | 2.1 |
| 6. Apparel & Other Textile Products (SIC 23) | 43,500 | 1,235,100 | . 1 | 109,500 | 3.5 | ı |
| 7. Lumber & Wood Products, Except Furniture (SIC 24) | 3,800 | 556,900 | 1 | 282,600 | 0.7 | 1 |
| 8. Furniture & Fixtures (SIC 25) | 8,800 | 450,700 | 400 | 354,400 | 2.0 | 0.1 |
| 9. Paper & Allied Products (SIC 26) | 28,600 | 642,700 | 2,800 | 622,200 | 4.4 | 0.5 |
| 10. Printing, Publishing & Allied Industries (SIC 27) | 39,400 | 1,079,300 | 1,600 | 237,600 | 3.7 | 0.7 |
| 11. Chemicals & Allied Products (SIC 28) | 18,700 | 1,012,500 | 2,000 | 747,400 | 1.8 | 0.3 |
| 12. Rubber & Miscellaneous Plastics Products (SIC 30) | 30,300 | 587,600 | 9,200 | 238,100 | 5.2 | 3.9 |
| | 23,200 | 256,800 | 1,600 | 9,300 | 9.0 | 17.2 |
| 14. Stone, Clay & Glass Products (SIC 32) | 12,700 | 613,500 | 23,300 | 484,300 | 2.1 | 8.4 |
| | 17,700 | 1,179,700 | 26,600 | 1,168,900 | 2.5 | 2.3 |
| 16. Fabricated Metal Products (SIC 34) | 40,000 | 1,335,800 | 43,800 | 1,779,300 | 0.0 | 2.25 |
| | /8,100 22,700 | 2,068,800 | 254,100 | 2,370,800 | ж ж с | 10.7 |
| 18. Electrical Machinery, Equipment & Supplies (SIC 36) | 87,700 | 1,760,600 | 3,200 | 850,700 | 0.0 | 4.0 |
| | 21,000 | 1,649,100 | 000 | 3,404,900 | 1. C | (a) |
| | 36,100 | 400,000 | 305 000 | 14 156 500 | 0.7 |) o |
| 21. Non-Manufacturing. 10tai, except Covernment | 78,800 | 3 457 000 | 37,000 | 7,307,300 | 23 | 0.5 |
| | | | | | | |
| Services | | 4,498,000 | 317,900 | 3,089,000 | 2.5 | 10.3 |
| 24. Wholesale & Retail Trade | 527,400 | 16,947,000 | 29,400 | 1,426,000 | 3.1 | 2.1 |
| 25. Finance, Insurance & Real Estate | 138,300 | 4,223,000 | 1 | 169,000 | 3.3 | ı |
| 26. Services & Mining | 506,300 | 14,740,000 | 10,700 | 486,600 | 3.4 | 2.2 |
| (a) Less than 0.05% Dash () denotes zero. | | * | | • | | |
| Because of rounding, sums of Individual items may not equal totals. Source: U.S. Department of Labor, Bureau of Labor Statistics, Bulletin 1940, Analysis of Work Stoppages, 1975 (1977). | 1940, Analysis of W | ork Stoppages, 197 | 5 (1977). | | | |
| 1 (2) oce than 0 050 | | | | | | |

Massachu- Number of

(a) Less than 0.05%.



STABILITY

Massachusetts' turnover rates in manufacturing are among the lowest in the nation. If the number of separations initiated by the employee (quits) is isolated, Massachusetts' advantage is even greater, as the following tables illustrate.

AVERAGE MONTHLY QUITS PER 100 WORKERS, 1976

| Industry Group | Massachusetts | U.S. |
|--|---------------|------|
| Manufacturing, Total | 1.4 | 1.7 |
| Durable Goods | 1.0 | 1.4 |
| Lumber & Wood Products, Except Furniture (SIC 24) | 3.5 | 3.0 |
| Furniture & Fixtures (SIC 25) | 2.3 | 3.0 |
| Stone, Clay & Glass Products (SIC 32) | 0.7 | 1.5 |
| Primary Metal Industries (SIC 33) | 0.6 | 0.7 |
| Fabricated Metal Products (SIC 34)* | 1.2 | 1.4 |
| Machinery, Except Electrical (SIC 35) | 0.9 | 1.0 |
| Electrical Machinery, Equipment & Supplies (SIC 36) | 1.2 | 0.7 |
| Transportation Equipment (SIC 37) | 0.7 | 1.2 |
| Instruments & Related Products (SIC 38) | 0.9 | 0.7 |
| Nondurable Goods | 1.8 | 2.2 |
| Food & Kindred Products (SIC 20) | 1.6 | 2.6 |
| Textile Mill Products (SIC 22) | 1.3 | 2.9 |
| Apparel & Other Textile Products (SIC 23) | 1.6 | 3.0 |
| Paper & Allied Products (SIC 26) | 1.1 | 1.2 |
| Printing & Publishing (SIC 27) | 1.8 | 1.6 |
| Chemicals & Allied Products (SIC 28) | 0.7 | 0.7 |
| Rubber & Misc. Plastic Products, Not Elsewhere Classified (SIC 30) | 2.6 | 2.3 |
| Leather & Leather Products (SIC 31) | 2.9 | 3.7 |
| Miscellaneous* | 2.5 | 1.7 |

^{*} Includes Ordnance & Accessories (SIC 19)

[&]quot;Includes Tobacco Manufactures (SIC 21), Petroleum & Coal Products (SIC 29) and Miscellaneous Manufacturing Industries (SIC 39)

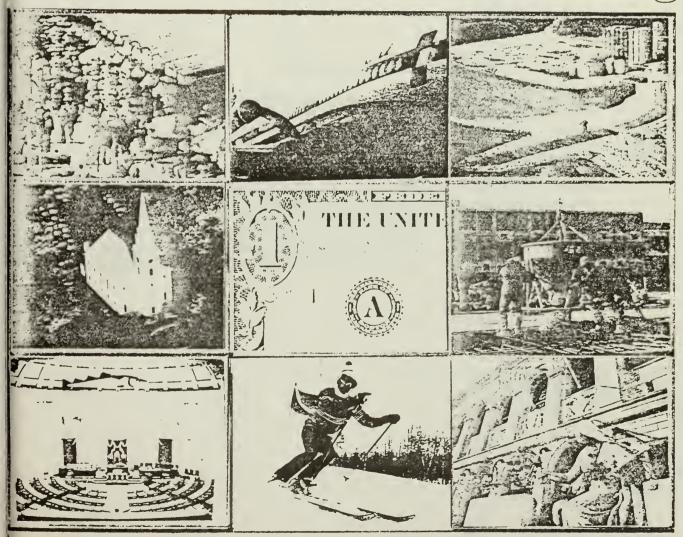
Source: Massachusetts Division of Employment Security, Labor Tumover in Manufacturing (Jan.-Dec. 1976). U.S. Department of Labor, Bureau of Labor Statistics, Employment and Earnings, Vol. 24, #3 (March 1977).

| Alabama | N.A. | Kentucky | 1.5 | North Dakota | 3.1 |
|-------------|--------|----------------|------|----------------|--------|
| Alaska | 8.3 | Louisiana | N.A. | Ohio | 0.9 |
| Arizona | 1.8 | Maine | 3.2 | Oklahoma | 3.5 |
| Arkansas | 4.1 | Maryland | 1.1 | Oregon | 2.3* |
| California | N.A. | MAŚSACHUSETTS | 1.4 | Pennsylvania | 0.9 |
| Colorado | N.A. | Michigan | 0.8 | Rhode Island | 2.6 |
| Connecticut | 1.0 | Minnesota | 1.7 | South Carolina | 2.8 |
| Delaware | 0.8* | Mississippi | 1.9 | South Dakota | 2.8 |
| D.C. | N.A. | Missouri | 1.7 | Tennessee | N.A. |
| Florida | 2.4 | Montana | 2.4 | Texas | N.A. |
| Georgia | 2.5 | Nebraska | 2.6 | Utah | 3.0*** |
| Hawaii | 0.8** | Nevada | 3.4 | Vermont | 1.3 |
| Idaho | 3.3*** | New Hampshire | 2.3 | Virginia | 1.8 |
| Illinois | N.A. | New Jersey | N.A. | Washington | N.A. |
| Indiana | 1.2 | New Mexico | N.A. | West Virginia | N.A. |
| Iowa | 1.8 | New York | 1.1 | Wisconsin | 1.1 |
| Kansas | 2.9 | North Carolina | 2.8 | Wyoming | 3.8 |

Source: U.S. Department of Labor, Bureau of Labor Statistics, Employment and Eamings, Vol. 24, #9 (Sept. 1977).

Excludes canning and preserving.
 Excludes canned fruits, vegetables, preserves, jams and jellies.
 Excludes canning and preserving and sugar.
 N.A. = Not Available.

Research & Training





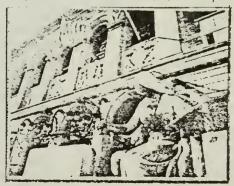
Education, Research & Training

Massachusetts was the site of the nation's first public school (Boston Latin in 1635), and its first private college (Harvard in 1636). Massachusetts also had the first tax-supported school system (in 1647), the first board of education and the

first compulsory school attendance law. The Commonwealth's commitment to educational excellence is just as strong today. The Boston-Cambridge area boasts the highest concentration of institutions of higher learning in the world. Seven of the area's universities alone account for over 10% of the advanced degrees awarded in the U.S. each year. And the same seven institutions enroll nearly 100,000 students annually.

Massachusetts is also a leader in many fields of research and development. Among these are electronic data processing, oceanographic research, medical instrumentation and other precision instruments. The concentration of small research and development companies, in relation to population, is three times as high as in California or New York.

In addition, Massachusetts offers an effective and progressive training program which allows companies to train employees according to their specific needs. In most cases, the Commonwealth assumes all direct training costs, which includes virtually all items exclusive of payroll.



Colleges & Universities

INSTITUTIONS WHICH HAVE AUTHORITY TO CONFER BACCALAUREATE AND GRADUATE DEGREES

Independent Institutions

American International College 170 Wilbraham Road Springfield, MA 01109 Amherst College

Amherst College Amherst, MA 01002

Andover Newton Theological School Newton Centre, MA 02159

Antioch College Graduate Education Center

Institute of Open Education 133 Mt. Auburn Street

Cambridge, MA 02138 Anna Maria College Paxton, MA 01612

Arthur D. Little Management

Education Institute Cambridge, MA 02140

Assumption College 500 Salisbury Street Worcester, MA 01609

Atlantic Union College South Lancaster, MA 01561

Babson College Babson Park, MA 02157

Bentley College Waltham, MA 02154 Berklee College of Music

1140 Boylston Street Boston, MA 02215

Berkshire Christian College

Lenox, MA 01240 Boston College

Chestnut Hill, MA 02167

Boston Conservatory of Music

8 Fenway Boston, MA 02115

Boston University Boston, MA 02215

Bradford College South Main Street Bradford, MA 01830

Brandeis University Waltham, MA 02154

Campus Free College 466 Commonwealth Avenue

Boston, MA 02215

Central New England College of Technology

768 Main Street Worcester, MA 01610

Clark University 950 Main Street Worcester, MA 01610

College of Our Lady of the Elms 291 Springfield Street

291 Springfield Street Chicopee, MA 01013

College of the Holy Cross Worcester, MA 01610

Curry College Milton, MA 02186

Eastern Nazarene College 23 East Elm Avenue Wollaston, MA 02170

Emerson College 148 Beacon Street Boston, MA 02116 Emmanuel College 400 The Fenway Boston, MA 02115

Episcopal Divinity School 99 Brattle Street

Cambridge, MA 02138

Goddard

Goddard-Cambridge

Graduate Program in Social Change

5 Upland Road

Cambridge, MA 02140

Gordon College 255 Grapevine Road Wenham, MA 01984

Gordon-Conwell Theological

Seminary

South Hamilton, MA 01982

Hampden College of Pharmacy Holyoke, MA 01040

Hampshire College Amherst, MA 01002

Harvard University Cambridge, MA 02138

Hebrew College 43 Hawes Street Brookline, MA 02146

Hellenic College 50 Goddard Avenue Brookline, MA 02146

Institute of Open Education 133 Mt. Aubum Street Cambridge, MA 02138

Lesley College 29 Everett Street Cambridge, MA 02138

Massachusetts College of Pharmacy 179 Longwood Avenue

Boston, MA 02115
Massachusetts Institute of Technology

77 Massachusetts Avenue Cambridge, MA 02139

Merrimack College

North Andover, MA 01845

Mount Holyoke College South Hadley, MA 01075

New England College of Optometry 424 Beacon Street

Boston, MA 02115

New England Conservatory of Music 290 Huntington Avenue

Boston, MA 02115

New England School of Law

126 Newbury Street Boston, MA 02116

Nichols College Dudley, MA 01570

Northeastern University 360 Huntington Avenue Boston, MA 02115

Pope John XXIII National Seminary

558 South Avenue Weston, MA 02193 Radcliffe College

Cambridge, MA 02138

Regis College Weston, MA 02193

St. Hyacinth College and Seminary

66 School Street Granby, MA 01033

St. John's Seminary 127 Lake Street Brighton, MA 02135

Simmons College 300 The Fenway Boston, MA 02115

Simon's Rock Early College Great Barrington, MA 01230

Smith College

Northampton, MA 01063

Springfield College 263 Alden Street Springfield, MA 01109

Stonehill College Washington Street North Easton, MA 02356

Suffolk University 41 Temple Street Boston, MA 02114

Swain School of Design 19 Hawthom Street New Bedford, MA 02740

Tufts University Medford, MA 02155

Wellesley College Wellesley, MA 02181

Wentworth College of Technology 550 Huntington Avenue Boston, MA 02115

Independent Institutions

Western New England College 1215 Wilbraham Road Springfield, MA 01119

Weston College of Theology Cambridge, MA 02138

Wheaton College Norton, MA 02766 Wheelock College 200 Riverway Boston, MA 02215 Williams College Williamstown, MA 012

Williamstown, MA 01267 Woods Hole Oceanographic Institution Woods Hole, MA 02543 Worcester Foundation for Experimental Biology Shrewsbury, MA 02145 Worcester Polytechnic Institute Worcester, MA 01609

Public Institutions

Boston State College 625 Huntington Avenue Boston, MA 02115

Bridgewater State College Bridgewater, MA 02324

Fitchburg State College 160 Pearl Street Fitchburg, MA 01420

Framingham State College 100 State Street Framingham, MA 01701

Massachusetts College of Art 364 Brookline Avenue Boston, MA 02215 Massachusetts Maritime Academy Buzzards Bay, MA 02532 North Adams State College Church Street

North Adams, MA 01247 Salem State College Salem, MA 01970

Southeastern Massachusetts University

North Dartmouth, MA 02747 University of Lowell

1 University Avenue Lowell, MA 01854 University of Massachusetts Amherst, MA 01002

University of Massachusetts
Boston Campus

Harbor Campus, Boston, MA 02125 University of Massachusetts Medical

School

55 Lake Avenue North Worcester, MA 01605

Westfield State College Western Avenue Westfield, MA 01085

Worcester State College 486 Chandler Street Worcester, MA 01602

INSTITUTIONS WHICH HAVE THE AUTHORITY TO CONFER ASSOCIATE LEVEL DEGREES

Independent Institutions

Andover Junior College 90 Main Street Andover, MA 01810

Aquinas Junior College 303 Adams Street Milton, MA 02186

15 Walnut Park Newton, MA 02158

Bay Path Junior College 58 Longmeadow Street Longmeadow, MA 01106

Bay State Junior College 122 Commonwealth Avenue Boston, MA 02116

Becker Junior College 61 Sever Street Worcester, MA 01609

Cathenne Laboure Junior College 2120 Dorchester Avenue Boston, MA 02124

Chamberlayne Junior College 128 Commonwealth Avenue Boston, MA 02116

Dean Junior College 99 Main Street Franklin, MA 02038

Endicott College A Two Year College for Women Beverly, MA 01915 Fisher Junior College 118 Beacon Street Boston, MA 02116

Forsyth School for Dental Hygienists

Boston, MA 02115

Franklin Institute of Boston 41 Berkeley Street Boston, MA 02116

Garland Junior College 409 Commonwealth Avenue

Boston, MA 02215 Grahm Junior College 632 Beacon Street

Boston, MA 02215 Holliston Junior College Holliston, MA 01746

Lasell Junior College Newton, MA 02166

Leicester Junior College 1003 Main Street

Leicester, MA 01524

Mount Ida Junior College 777 Dedham Street Newton Centre, MA 02159 New England Institute of Anatomy, Sanitary Science and Embalming 656 Beacon Street Boston, MA 02215

Newbury Junior College 921 Boylston Street Boston, MA 02115

Pine Manor Junior College 400 Heath Street Chestnut Hill, MA 02167

Wentworth Institute 550 Huntington Avenue Boston, MA 02115

Worcester Junior College 768 Main Street Worcester, MA 01608

Public Institutions

Berkshire Community College West Street Pittsfield, MA 01201 Blue Hills Regional Technical Institute

Canton, MA 02021 Bristol Community College

777 Elsbree Street Fall River, MA 02720

Bunker Hill Community College Rutherford Avenue Charlestown, MA 02129

Cape Cod Community College Route 132

West Bamstable, MA 02668

Greenfield Community College College Drive

Greenfield, MA 01301

Holyoke Community College 303 Homestead Avenue Holvoke, MA 01040

Massachusetts Bay Community College

50 Oakland Street Wellesley, MA 02181

57 Stanley Avenue Watertown, MA 02172

Massasoit Community College 290 Thatcher Street

Brockton, MA 02402

Middlesex Community College Springs Road

Bedford, MA 01730

Mount Wachusett Community

College

444 Green Street

Gardner, MA 01440

Northern Essex Community College Elliott Street Haverhill, MA 01830

North Shore Community College 3 Essex

Beverly, MA 01915

Quincy Junior College 34 Coddington Street Quincy, MA 02169

Quinsigamond Community College 670 West Boylston Street Worcester, MA 01606

Roxbury Community College Roxbury, MA 02186

Springfield Technical Community College

Springfield, MA 01105

Schools Offering State Funded Occupational Education Programs

Apponequet Regional Vocational High School East Freetown 02717

Arlington Senior High School Arlington 02174

Assabet Valley Regional Vocational School District

Marlborough 01752 District Comprises: Berlin, Hudson, Marlborough, Maynard, Northborough, Southborough,

Westborough

Attleboro Vocational Technical High School Attleboro 02703

Bay Path Regional Vocational School Charlton 01507

District Comprises: Aubum. Charlton. Dudley, Oxford, Southbridge, Webster

Beverly Trade - Claude H. Patten Trade High School Beverly 01915

Blackstone Valley Regional Vocational Technical High School Upton 01568

District Comprises: Bellingham, Blackstone, Douglas, Grafton, Hopedale, Mendon, Milford, Millbury, Northbridge, Sutton, Upton. Uxbridge

Blue Hills Regional Vocational Technical High School Canton 02021

Boston Trade High School Roxbury 02120 District Comprises: Boston

Boston Industrial Cooperative Programs

Comprises: Brighton High School. Charlestown High School, Dorchester High School, East Boston High School, Hyde Park High School. Jamaica Plain High School, South Boston High School, Boston Technical School

Boston Occupational Resource Center Jamaica Plain 02130 Boston's Occupational Resource Center (ORC) will offer in-depth training in a variety of career areas relative to the Boston job market. To be offered commencing September. 1978.

Bristol-Plymouth Regional Technical Vocational School Taunton 02780 District Comprises: Berkeley, Bridgewater, Middleborough, Raynham, Taunton

Brockton High School Brockton 02401

Brookline High School Brookline 02146

Cambridge School Department — Rindge Technical High School Cambridge 02138

Cape Cod Regional Technical High School District Harwich 02645 District Comprises: Barnstable, Brewster, Chatham, Dennis, Eastham, Harwich, Orleans, Provincetown, Truro, Wellfleet,

Yarmouth

Chicopee Comprehensive High School Chicopee 01020

District Comprises: Chicopee

Dartmouth Vocational High School North Dartmouth 02747

William J. Dean Vocational Technical High School (Holyoke Trade High School)

Holvoke 01040

Dighton-Rehoboth Regional Vocation High School Rehoboth 02769 District Comprises: Dighton & Rehoboth

Diman Regional Vocational Technical High School Fall River 02722

District Comprises: Fall River. Swansea, Somerset, Westport

Everett Vocational High School Everett 02149

District Comprises: Everett Essex Agricultural & Technical

Institute Hathome 01937

District Comprises: Essex

David Hale Fanning Trade High School

Worcester 01608

Franklin County Regional Technical School Tumers Falls 01376 District Comprises: 18 Towns in Franklin County

Gloucester Vocational School Gloucester 01930

Greenfield Vocational High School Greenfield 01301

Holyoke Trade High School (see William J. Dean Vocational Technical High School)

King Philip Regional Vocational School

Wrentham 02093

District Comprises: Norfolk, Wrentham, Plainville

Greater Lawrence Regional Vocational Technical High School Andover 01810

District Comprises: Andover, Lawrence, Methuen, North Andover

Leominster Trade High School Leominster 01453

Greater Lowell Regional Vocational Technical School Tyngsboro 01879 Lynn Vocational & Technical Institute Lynn 01902

Ralph C. Mahar Regional School Orange 01364

Malden High School Malden 02148

Martha's Vineyard Regional High School Oak Bluffs 02557

Charles McCann Regional Vocational Technical School (Northern Berkshire Regional Vocational Technical School) North Adams 01247 District Comprises: Adams, Clarksburg, Florida, Monroe, North Adams,

Savoy, Williamstown
Masconomet Regional High School

Topsfield 01983

Medford Vocational Technical
High School
Medford 02155

Melrose High School `Melrose 02176
Milford High School
Milford 01757

Minuteman Regional Vocational Technical School Lexington 02173

Monument Mountain Regional High School District Comprises: Great Barrington, Stockbridge, West Stockbridge Great Barrington 01230

Montachusett Regional Vocational Technical School District

Fitchburg 01420
District Comprises: Ashby, Barre,
Fitchburg, Gardner, Harvard,
Hubbardston, Royalston, Sterling,
Winchendon









Nashoba Valley Regional Vocational Technical High School Westford 01886 District Comprises: Chelmsford, Groton, Littleton, Westford New Bedford Vocational High School New Bedford 02740 District Comprises: New Bedford

Greater New Bedford Regional Vocational Technical High School New Bedford 02740 District Comprises: Dartmouth, Fairhaven, New Bedford Newton North High School Technical-Vocational Department Newtonville 02160

Norfolk County Agricultural High School Walpole 02081 District Comprises: Norfolk County

North Shore Regional Vocational School District Beverly 01915

District Comprises: Beverly, Boxford, Danvers, Essex, Gloucester, Hamilton, Lynnfield, Manchester, Marblehead, Middleton, Rockport, Salem, Swampscott, Topsfield, Wenham

Northeast Metropolitan Regional Vocational Technical School Wakefield 01880 District Comprises: Chelsea, Malden, Melrose, North Reading, Reading, Revere, Saugus, Stoneham, Wakefield, Winchester, Winthrop, Wobum

Northem Berkshire Regional Vocational Technical School (see Charles McCann Regional Technical Vocational School)

Old Colony Regional Vocational Technical High School Rochester 02770 District Comprises: Acushnet, Carver, Mattapoisett, Rochester Pathfinder Regional Vocational-Technical High School Palmer 01069

Henry O. Peabody Vocational High School Norwood 02062

Peabody Vocational High School Peabody 01960

Pittsfield Vocational School Pittsfield 01201

District Comprises: Pittsfield

Putnam Vocational Technical High School (Springfield Trade High School)

Springfield 01109

Quincy Vocational Technical School Quincy 02369

District Comprises: Quincy Salem Vocational High School Salem 01970

Shawsheen Valley Regional Technical Vocational High School

Billenca 01866
District Comprises: Bedford,
Billenca, Burlington, Tewksbury,
Wilmington

Silver Lake Regional High School Kingston 02364

District Comprises: Halifax, Kingston, Pembroke, Plympton

Somerville Technical Trade High School

Somerville 02145

Smith's Agricultural Vocational School

Northampton 01060

District Comprises: Hampshire County

South Middlesex Regional Vocational Technical School District

South Shore Regional Vocational-Technical High School Hanover 02339

District Comprises: Abington, Cohasset, Hanover, Norwell, Rockland, Scituate Southeastern Regional Vocational Technical School South Easton 02375 District Comprises: Brockton, East Bridgewater, West Bridgewater,

Easton, Foxboro, Mansfield,

Norton, Sharon, Stoughton

Southern Berkshire Regional School (Mt. Everett Regional School District) Sheffield 01257

District Comprises: Alford, Egremont, Monterey, New Marlborough, Sheffield

Springfield Trade High School (see Putnam Vocational Technical High School)

Tri-County Regional Vocational Technical School District Franklin 02038

Upper Cape Cod Regional Vocational Technical School Boume 02532

Waltham Vocational High School Waltham 02154

Westfield Vocational High School Westfield 01085

Weymouth Vocational Technical High School

East Weymouth 02189

Whittier Regional Vocational Technical High School Haverhill 01830

District Comprises: Amesbury, Georgetown, Groveland, Haverhill, Ipswich, Merrimac, Newbury, Newburyport, West Newbury. Rowley, Salisbury

Worcester Industrial Technical Institute

Worcester 01608

District Comprises: Worcester and

Worcester County

Worcester Vocational Technical High School Worcester 01608

District Comprises: Worcester

Research

The application of scientific research in the development of resources and the resolution of industrial problems has played an increasingly important role in the growth of Massachusetts' economy. Industrial research laboratories now employ over 30,000 scientists, technicians and engineers in nearly 1,000 facilities in the commonwealth.

Many dramatic advances and highly productive technical innovations have been recorded over the years in Massachusetts: registering temperatures in the Gemini shield in excess of 5,000°F; forcing molten bubbles into a die to produce a wide range of hollow products; measuring and defining sound in a multitude of air, land and sea objects as an element of a complex surveillance system; and many achievements in the field of optics.

The growing field of electronic data processing ranks high on the list of Massachusetts' contributions to business, science and engineering. The Commonwealth has played a key role in the development of this industry, from the completion of the first automatic digital device (at Harvard University in 1944), to today's complex data processing systems. Some

of the leaders in this industry that have made major commitments in Massachusetts are Data General, Wang Laboratories and the Digital Equipment Corporation.

More than 75 Massachusetts companies are engaged directly in the manufacture, research or development of oceanographic products and services. The renowned Woods Hole oceanographic Institute, located on the southern shore of Cape Cod, is the site of continuing and extensive oceanographic research.

Massachusetts' successful leadership position in the field of research and development—like the overall quality of its labor force—can be attributed largely to the excellence of its many educational institutions. In light of that fact, Massachusetts is certain to continue in the forefront of scientific and technological exploration

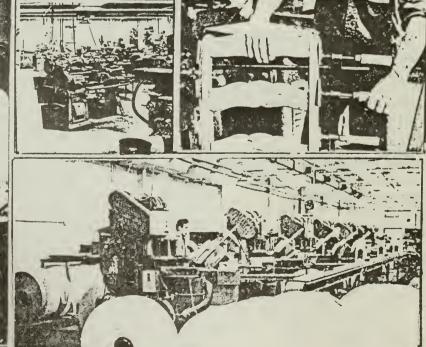
Massachusetts Employer Training Assistance (META)

Massachusetts Employer Training Assistance (META) is a recently established service to industry which provides customized training of employees for skilled positions in companies locating or expanding in Massachusetts. The commonwealth assumes all direct training costs, which includes virtually all items exclusive of payroll. The company may be eligible if it meets two conditions: at least 10 skilled jobs must be filled, and these jobs must pay at least \$4.00 per hour upon completion of training.

There are several major advantages for any business that chooses to avail itself of Massachusetts Employer Training Assistance. Primarily, the company obtains a skilled work force that is specifically suited to its needs. A detailed training program and schedule are developed on behalf of the participating company. The firm reviews the design of the program. the choice of all training curricula. the formulation of recruitment plans. scheduling and related matters. In a very real sense, each participating firm ultimately has its own training program as a result of these efforts.

Through the program, then, the company develops an in-house training capability that can be utilized long after the initial training has been completed. This represents another of META's benefits. As part





of the program, the company's supervisors may receive a short, intensive course in supervisory and

training skills.

Finally, the paper work and recordkeeping are kept to an absolute minimum. Training can usually be completed within three to 10 months. In the first months of META activity, a wide variety of occupational categories had either been trained, or were in process as follows:

Job Titles After **META Training**

Professional, Technical and Managerial

Manager Engineer Systems Analyst Computer Programmer Computer Operator Materials Controller Personnel Administration

Machine Trade Operations

Loom Technician Machine Maintenance Person Weaver Cloth Grader Bean Warp Tender Machine Operator Tool and Die Maker Card Fixer

Tube Bender Die Maker Roll Finisher Wire Form Set-Up Millwright Turret Lathe Operator

Processing Occupations

Coater Knife Man Press Operator Blister Operator Rewind Operator

Sales and Clerical

Sales Engineer Supervisory Clerk Bookkeeper Executive Secretary Sales Secretary

Bench Work Occupations

Stitcher: (Footwear and Apparel) Cutter

Finisher

Mold Maker

Inspector

Laster

Packer

Caster

Sheet Metal Mechanic

Chaser

Solderer

Structural Work Occupations

Maintenance Man Welder

Miscellaneous Occupations

Graphic Artist Warehouseman

On-the-Job Training (OJT)

On-The-Job Training (OJT) is a federally created program which enables eligible persons to learn a skill while working.

OJT can save an employer money by paying for training costs which may be as high as: 50% or more of the employee's wages for time spent in on-the-job training; 100% of the wages for time spent in job-related classroom instruction: and 100% of costs for instructors and instructional material.

Employers may also be eligible to claim a special credit on their federal income tax return through OJT: 20% of an eligible employee's wages may be claimed as a credit against the firm's liability, provided that the company meets certain minimum standards, including requirements on the duration of employment of an OJT employee. If this tax credit is combined with the other reimbursements, the employer can save more than half the cost of an employee's first-year wages.

Most private organizations are eligible for the OJT program, as long as abnormal labor conditions, such as a strike or lockout, do not exist. The program is applicable to almost every job that requires some occupational training. The company must agree to retain the employee when training is completed, subject to satisfactory performance.

Skills, Iraining Improvement Program (STIP)

Skills, Training Improvement Program (STIP)

The objective of the Skills Training Improvement Program (STIP) is to involve the private sector in the design and operation of training programs by working with private employers to identify occupations in which training should be provided, to develop curicula, to review and monitor programs, and to provide instruction, instructors, equipment and training sites. This collaborative approach insures that employer's personnel needs are met and, as a result, participants in the training program are placed in jobs that utilize the skills in which they have been trained.

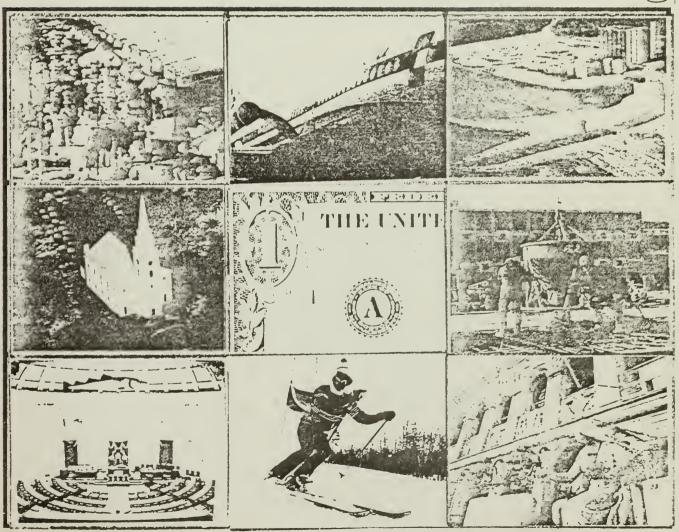
Local CETA prime sponsors develop agreements with private employers to provide classroom and on-the-job training, for higher skilled occupations, to long-term unemploved workers for periods of six to fifteen months. Training is primarily classroom; however, a combination of on-the-job and classroom training is possible.

Skills Center Training

A skills center program is different from a vocational school. Both programs train people in the practical art of earning a living. Skills Centers are usually established under the sponsorship of the CETA programs, and work on a very intensive basis. Academic subjects are work-related and pertinent to the skill being developed. Participants vary in age from youth to adult. Trainees graduate from skill centers at many times during a year and are not tied to normal academic schedules.

The training offered is based on local demands for jobs and may be adjusted frequently, depending on the needs of business.

Financing







- 5. The construction of solid waste disposal facilities.
- 6. The purchase or construction of research and development facilities.

Revenue bonds cannot be used to refinance existing industrial loans. The advantages received by the manufacturer by financing through industrial revenue bonds are as follows:

- 1. 100% financing 100% of the funds required for the acquisition of land, building, machinery and equipment, plus the cost of issuing the bonds can be financed;
- 2. Lower interest rates—The purchaser of the bond issue receives interest which is exempt from federal income taxes. Because of this exemption, the interest rate on the loan is considerably lower than comparable conventional loan rates;
- 3. No registration Industrial revenue bonds do not have to be registered with the Securities and Exchange Commission.

The same banking principles that are used in commercial loan financing are used for revenue bond financing. The municipality does not pledge or commit its own faith, credit or financial obligation in revenue bond financing. The financial condition and credit rating of the company determine the marketability of the bond issue.

Industrial revenue bonds are issued on the credit of the industrial tenant and such other security as he may furnish such as a mortgage of the project or a guaranty by another of his obligation. In the event of default, the bondholder looks only to the security furnished by the industrial tenant to satisfy the obligation represented by the bonds.

Tax-exempt industrial revenue bond financing is presently subject to three restrictions under the Internal Revenue Service code:

1. Revenue bonds issued to finance new plants or the expansion of facilities are limited to \$5,000,000.

A company may not exceed \$5,000,000, including the revenue bonds, in total capital expenditures (depreciable assets) within the municipality in which the project is located for a six-year period beginning three years before the date the bonds are issued, and ending three years after the date of the issue;

- 2. Bonds may also be issued under the \$1,000,000 provision, which allows a company to issue up to \$1,000,000 in revenue bonds with no limitation on capital expenditures;
- There is no limit on the size of a bond issue when used for the financing of pollution abatement facilities.

To date, 135 municipalities have approved legislation to establish Industrial Development Finance Authorities, which enable revenue bonding.

Massachusetts Industrial Mortgage Insurance Agency (MIMIA)

The Massachusetts Industrial Mortgage Insurance Agency (MIMIA) is a new public financial assistance agency of the commonwealth. It is empowered to provide insurance on loans to industries which need funding for the acquisition, construction or alteration of industrial enterprises, including machinery and equipment. It is directed at areas of generally high unemployment, and for projects that will provide primary employment. Its purpose is to enable industry to obtain loans for expanded activity which produces jobs and increased capital investment in the Commonwealth.

A one-time special state appropriation of two million dollars created a Mortgage Insurance Fund. It is governed by a five-member Board of Directors, including the Commissioner of Commerce & Development, and four members appointed by the

Governor with expertise in the areas of industrial mortgage credit, real estate development and commercial credit. The Board of the Massachusetts Industrial Mortgage Insurance Agency will review and approve qualified individual mortgage insurance applications and set premiums to be paid to the agency for the mortgage insurance. Over a period of time, these paid-in premiums will increase the amount of money in the Fund and allow the agency to insure more mortgage loans.

Any industrial enterprise whose application for a loan from a conventional lender would be more favorably considered if guaranteed is eligible to apply for this insurance. If the application meets established criteria, the firm would be eligible for insurance on 90% of the loan for purchasing and rehabilitating the plant, and up to 80% for its equipment loan (current regulations establish a 40% limit for many companies). The duration of the mortgage loans cannot exceed 30 years on land and plant, and 15 years on machinery and equipment. With this insurance, the firm would then obtain the loan from a conventional lender.

Community Development Finance Corporation (CDFC)

The goal of the Community Development Finance Corporation (CDFC) is to help stabilize and improve the economic base of Massachusetts' many older cities and towns.

CDFC will provide capital through local community development organizations to firms located in depressed areas of the Commonwealth. Financing can be provided in the form of debt, preferred or common stock, or other capital participation instruments. If equity is used, CDFC is prohibited from owning more than 49% of the stock of any firm. Investments must be made in situations which have a reasonable chance of payback, CDFC cannot provide grants.

One of the guiding principles of the Community Development

Finance Corporation is an emphasis on local initiative. All projects must have sponsorship from a not-forprofit local community development organization. Such an organization must have a board of directors that represents a specific geographic area. The area must have an income level that is at least 15% below the average income for the Boston metropolitan area, or meet other criteria established by CDFC. The definition of a community development corporation is broad enough to include many of the Commonwealth's local development corporations, community development corporations and other organizations. These local groups will be responsible for venture iden tification, packaging and presenting a project to CDFC. After the investment is made, the local organization will monitor the progress of the firm. Only proposals that provide "substantial primary employment" are eligible for CDFC funding. Although CDFC has the flexibility to undertake many investments, including new enterprises, extensive case gathering over the past two years suggests that the corporation may initially be most helpful in assisting local communities

to retain malure in dustnes possess significant job and tax with fits

other financial intermediaries succommercial banks, thrift and inversent bankers. The high risk "fron end" money will often stimulate nontional private financing from the esources. In order to make use of CDFC, local development organizations must have the capability to screen, package and monitor proposals. The availability of professionally administered financing and technical support from CDFC should provide an important stimulus to aggressive local initiatives

The Community Development Finance Corporation has a Board Directors that will make investment decisions on proposals. The Board, as provided by law, has nine members: six of the members represent the private financial community, local economic development organizations and organized labor. The remaining three members are ex officio state cabinet secretaries from the executive offices of Administration and Finance Communities and Development and Economic Affairs.

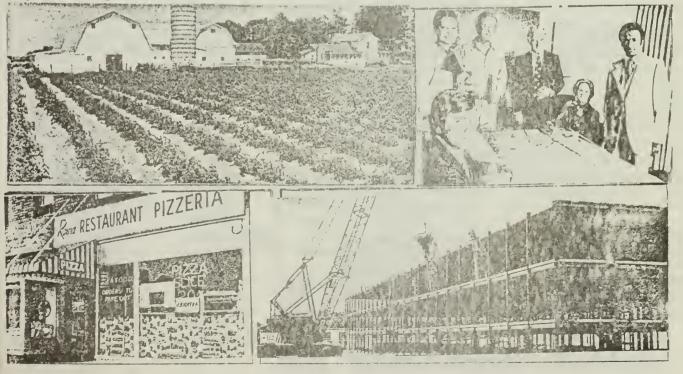
The Community Development

Finance Corporation was established by the Legislature, signed into law by the Governor and \$10 million for CDFC were approved as part of the commonwealth's capital outlay midget. Projections based on a realisminvestment pace suggest that this tha capitalization will enable CDFC to make investments for seven to 10 years. A modest return on investment will allow the organization to be self-sustaining.

Massachusetts Business Development Corporation (MBDC)

The Massachusetts Business
Development Corporation is not a
government agency; it is a company
In which most of Massachusetts' financial institutions, many of its businesses and a number of individuals
pool their money to share the risks of
helping enterprises grow. MBDC is
privately financed and self-supporting

The corporation makes loans that conventional lenders acting by themselves do not normally make. MBDC can do this because the nature of its



obligations is different from those of conventional financial institutions which have to face such considerations as deposit withdrawals and payments to beneficiaries of insurance policies.

MBDC can accept collateral that is less readily negotiable than that usually taken by insurance companies or banks. For example, the corporation can, and frequently does, take second real estate mortgages as security for loans.

Although interested in a prospective borrower's earnings history as an indication of its ability to repay, MBDC generally does not require the long earnings records that conventional financial institutions usually require of their term borrowers.

Despite their different areas of operation, MBDC and conventional lenders frequently do act together as participants in loans or with the corporation "backing up" a bank's or insurance company's first mortgage position with a second mortgage.

Massachusetts Capital Resource Company (MCRC)

The MCRC was established and funded by in-state life insurance companies and was organized for the purpose of providing new sources of capital to promote investment expansion and job growth in Massachusetts.

The MCRC makes investments under the conditions stipulated by Massachusetts law.

Each investment must:

- (1) Be used for purposes which will increase or maintain equal employment within Massachusetts; and
- (2) Be made to businesses which attempted—but were unable—to obtain comparable financing elsewhere;
- (3) Meet the conditions of A and B below.

A. Qualified businesses are those which are not:

- 1. Real estate developers:
- 2. Financial intermediaries (with certain limited exceptions);
- Retailers, except for divisions of retailers which are not themselves retailers and which otherwise constitute qualified businesses;
- 4. Construction contractors;
- **5.** Public utilities, including refuse and waste facilities; and
- Affiliates of another business in which a qualified investment cannot be made.

B. Qualified investments shall consist of original issue debt and equity securities but may not include:

- 1. Debt securities issued or guaranteed by any issuer whose senior debt is, or would be in the opinion of MCRC, rated Baa or above by Moody's or an equivalent rating service, except that subordinated debt of such issuer is permitted so long as such debt is, or would be in the opinion of MCRC, rated Ba or below.
- 2. Equity securities issued or guaranteed by any issuer whose senior debt is, or would be in the opinion of MCRC, rated above Baa.
- Debt or equity securities issued or guaranteed by an affiliate of a person whose senior debt is, or would be in the opinion of MCRC, rated Baa or above.
- Debt or equity securities issued or guaranteed by a person, or by an affiliate of a person, who is not a qualified business.
- 5. Debt securities issued or guaranteed by the Federal government, or by any state or local government, or by any agency thereof.
- **6.** Debt or equity securities with a stated maturity at time of issuance of less than five years.
- 7. Secured debt except in situations where all of the borrower's assets

- are subject to prior security interests or other liens or when a negative pledge cannot be obtained, or security obtained for previously held qualified investments in workouts of financially distressed businesses (Leeway for categories (6) and (7) is given in the "basket" (See category (9) below)).
- 8. Debt or equity securities of any one issuer and its affiliates aggregating more than \$5 million.
- 9. A basket is provided up to the greater of \$10 million or 25% of qualified investments for (i) secured loans, (ii) debt and equity securities with an original maturity of less than five years, and (iii) certain financings through a financial intermediary. However, such investments must otherwise meet the requirements of "qualified investments."

C. Other regulations affecting MCRC investments:

- 1. The MCRC must set aside at least \$3,000,000 to invest in certain small businesses which do not exceed the asset, net worth and net earnings standards applicable to investments which could be made by a small business investment company;
- 2. An investment committee of the MCRC will evaluate and act upon specific investments. An independent investment expert appointed by the Governor shall be a member of the investment committee and will participate with other members of such committee in making investment decisions; and
- 3. An urban loan specialist concerned with areas of high unemployment will serve as a member of the MCRC staff.

The foregoing is only a brief description of certain selected provisions of the law governing the MCRC. The full text of the governing law is contained in Chapter 816 of the Acts and Resolves of 1977. Section 16 of that Chapter more fully defines qualified investments.

Small Business Administration (SBA)

The Small Business Administration (SBA) is an independent federal agency that provides many forms of assistance to small businesses. The SBA administers many financial programs.

SBA can make direct loans of up to \$100,000, if funds are available. or participation loans in which SBA's share may be as great as \$150,000. Under the Loan Guaranty Plan, SBA can guarantee up to 90%, or \$350,000 (whichever is less), of a bank loan to a small firm. The agency can also make "pool loans" to corporations capitalized by groups of small business companies for purchasing raw materials, equipment, inventory or supplies for their individual businesses. Pool loans may also be used to obtain the benefits of research and development, or to establish such facilities, and may be made for up to \$250,000 for each pool member.

The SBA also administers Equal Opportunity Loans for disadvantaged business persons, Handicapped Assistance Loans, loans to state development companies, disaster loans (against physical damage, economic injury and similar unforeseen dislocations), a lease guarantee program, a surety bond program for contractors and a Minonty Enterprise Program.

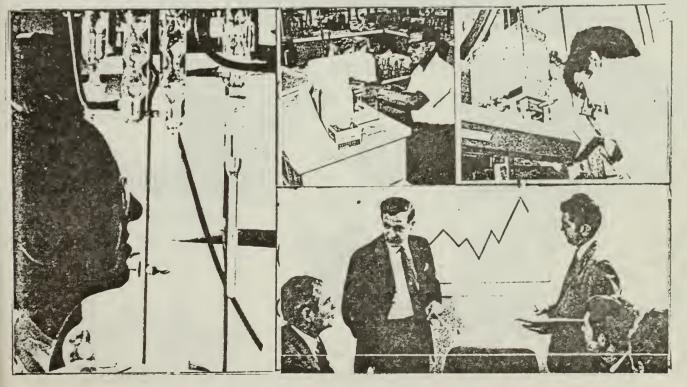
Economic Development Administration (EDA)

The Economic Development Administration (EDA) of the U.S. Department of Commerce offers assistance in the financing (or, under special circumstances, the refinancing) of business development projects by direct loans, or guarantees of loans, to finance the cost of fixed assets or to provide working capital. EDA may provide limited interest subsidies in conjunction with guarantees of loans

to finance the cost of fixed assets, and may also guarantee rental repayments of leases.

Applicants for EDA business development assistance are normally the operators of industrial and/or commercial facilities located, or to be located, in EDA eligible areas. When quaranteed loans or leases are involved, the lender or lessor must join in the application. EDA business development assistance is offered for the purpose of upgrading an area economically through creation or retention of permanent, well-paying jobs for local residents. The requested financial assistance must not be available from other sources, on terms and conditions that would permit the accomplishment of the project.

Direct fixed asset loans may not exceed 65% of the total cost of land, buildings, machinery and equipment for industrial or commercial enterprises. Direct working capital loans may be in the full amount required by the applicant. Guarantees extended by EDA on loans or leases may not exceed 90% of the amount owing on the obligation guaranteed. Interest



subsidies will only be approved concurrently with a guaranteed fixed asset loan to which they relate.

EDA business development assistance may extend to 25 years. However, duration of fixed asset loans, whether direct or guaranteed, and of leases of fixed assets, is limited to the useful life of the fixed assets to be acquired. Working capital loans, whether direct or guaranteed, lease guarantees and interest subsidies generally are limited to a term of not more than five years. Interest rates on EDA loans are determined by the cost of government borrowing, and are reviewed and set quarterly.

EDA expects all projects to be adequately supported by investment capital. The EDA legislation requires that at least 15% of the total eligible project cost for projects involving direct fixed asset loans be in the form of equity or a subordinated loan, repayable in no shorter period of time and at no faster an amortization rate than the EDA loan. At least one-third of the 15% of the total cost of projects involving EDA direct fixed asset loans must be supplied by the state, or by a community or area organization that is non-governmental in character. In certain cases, EDA may waive the 5% community share.

The requirement for 15% minimum equity investment also is applied to other types of EDA financial assistance. For example, for projects

involving working capital, borrowers should be in operation and have existing net working capital of at least 15% of their total working capital requirements.

Farmers Home Administration (FmHA) Business and Industrial Loans

The Farmers Home Administration (FmHA) of the U.S. Department of Agriculture offers a program of loans and loan guarantees to further business and industrial development and to establish business enterprises in rural areas or cities of 50,000 inhabitants or less. Priority is given to applications for projects in open country, rural communities and towns of 25,000 inhabitants or less. FmHA cooperates fully with other lenders.

Any legal entity, whether a public or private organization or individual is eligible. For private organizations or individuals, FmHA can guarantee loans by private lenders, and applicants should apply for the loan through their private lenders. The agency contracts to reimburse the

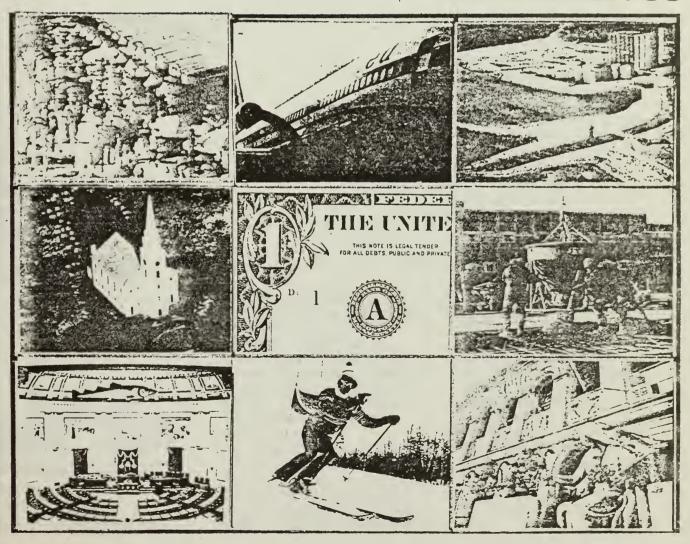
lender for a percentage of any loss sustained on such loans. Lenders are responsible for making and servicing the loans.

The purposes of the loans include, but are not limited to: financing business and industrial construction, conversion, acquisition and modernization; financing the purchase and development of land, easements, equipment, facilities, leases, machinery, supplies or material; supplying working capital and funds for fees and contingency charges; and controlling and abating pollution.

Loan guarantees may cover up to 90% of the lender's losses. Maturity may not exceed 30 years for land, buildings and permanent fixtures, 15 years for machinery and equipment (or the life of the machinery or equipment, whichever is shorter), or seven years for working capital.

The applicant must provide collateral, and sufficient equity to provide reasonable assurance of a successful project. For guaranteed loans, the interest rate will be determined by the lender and the borrower, consistent with the market rate. For private entrepreneurs, the interest rate will be computed on the cost of Treasury borrowing plus an increment to cover administrative costs.

Taxes & Tax Incentives





Taxes & Tax Incentives

Personal Income

The State's income tax law is based on two classes of income taxable at either 5% or 10%. Uneamed income, including interest (except from Massachusetts savings accounts), dividends and net capital gains, including gains from tangible property are taxed at the 10% level. In addition, a 7.5% surcharge is levied on the total amount of tax owed.

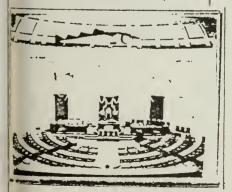
Deductions: Social Security payments, sick pay, employee business expense, child care and alimony.

Exemptions:

- 1. No tax if single income is not more than \$3,000; or if husband and wife joint return income is not more than \$5,000.
- 2. Single person \$2,000.
- 3. Husband and wife filing jointly—\$2,000 plus amount of earned income not exceeding \$2,000 of spouse with smaller income, plus \$600 if earned income of such spouse is not more than \$2,000. Married persons filing separately—\$1,000 each.
- 4. \$100 for single person and \$200 for husband and wife jointly against savings account interest from institutions within the commonwealth, which is taxed at the 5% rate.

Business or Manufacturing Corporations

Property Measure: 9.5%
Property Measure (reduced from \$7.98 per \$1,000 since 1972):



32.60 per \$1,000. Minimum Tax: \$228.00 Commercial Banks, Banking Associations, Trust Companies – 12.54% (net income).

Savings, Cooperative Banks and Savings & Loan Associations — 1% and 1/20th of 1% of deposits plus 14% surtax added to base tax. Life Insurance Companies and Insurance Departments of Savings Banks and Casualty Companies — 2.0% to 3.2% of gross premiums, and, if domestic, 1% on gross investment income.

Fire & Marine Insurance Companies -5.7% (on underwriting profits). Real Estate Transfer -\$1.14 for first \$100 to \$500 of selling price (less mortgage assumed), \$1.14 for each additional \$500 or fraction thereof.

- 5. \$600 for each dependent and \$600 additional if one or more dependent members of household under 12 and child care deductions not claimed.
- 6. \$600 additional for taxpayers and spouses age 65 or over.
- 7. Medical and dental expenses as claimed on U.S. return.

Sales and Use Tax

5% on gross receipts (including rental) or the storage, use or consumption of tangible personal property.

Exemptions:

Machinery, replacement parts thereof, materials, tools and fuel used directly and exclusively in an industrial plant, in furnishing power to an industrial plant, in agricultural production, and in commercial fishing; food for human consumption; utilities; clothing for human wear up to \$175 of sales price of any articles used as wearing materials; footwear; newspapers; magazines; school books; prescription drugs; sales of vessels and barges 50 tons or over constructed in Massachusetts and sold by the shipbuilders; fuel, supplies of fuel and repairs for vessels engaged in foreign and interstate commerce: fuel for heating purposes; motion picture films for commercial exhibition; property ordinarily sold by funeral directors: motor vehicles purchased by and specially equipped for paraplegics; casual and isolated sales under given conditions.

Other Taxes

Room occupancy—5.7% of total amount of rent for each occupancy. **Meal Tax**—6% based on taxable charge of \$.09 or more.

Alcoholic Beverages and Alcohol Excise—Malt beverages \$3.30 per barrel (31 gallons). Cider \$.03 per wine gallon. Still wine (including vermouth) \$.55 per wine gallon. Sparkling wines and champagne \$.70 per wine gallon. All alcoholic beverages containing 15% or less alcohol \$1.10 per wine gallon; beverages containing between 15% and 50% of alcohol \$4.05 per wine gallon; beverages containing more than 50% of alcohol \$4.05 per proof gallon.

Cigarettes – 21° per package of 20. Gasoline 8.5% per gallon.

Employment Security Contributions — 8 schedules ranging from 0.5% to 4.1% (present schedule is 2.9% — 4.1% on first \$4,200 wages of covered worker, plus 1% Solvency Tax).

Public Utilities – 6.5% (net income and allocated net income of interstate companies).

Local Property Taxes – Fair cash value of real and personal property. Rates fixed annually by the local board of assessors. Tax administered and collected at local level.

(All non-corporate businesses are taxed on personal property.)

Motor Vehicle Excise – \$66 per \$1000 of valuation.

Motor Vehicle Registration Fees:

- Private Passenger Cars \$14 biennially.
- Trucks gasoline, \$5 per 1,000 lbs. (min. \$20) annually; diesel, \$20 per 1,000 lbs. (min. \$80) annually.
- **Tractors** Part of semi-trailer unit: gasoline, \$5 per 1,000 lbs. (min. \$48 annually; diesel, \$20 per 1,000 lbs. (min. \$160) annually. Not part of semi-trailer unit: gasoline, \$5 per 1,000 lbs. (min. \$24) annually; diesel, \$20 per 1,000 lbs. (min. \$60) annually.
- **Trailers** (heavy-duty)—\$6 per 1,000 lbs. (min. \$60) annually.
- **Buses** (gasoline) \$120 or \$1.50 per seat depending on capacity (min. \$6) annually.

Pari-Mutuel Tax—From 2% to 11³/₄% of amount wagered per day depending upon type of racing, plus additional 1% of tax plus ¹/₂ breakage.

Estate Tax – 5% to 16%. On the taxable estate, after expenses, claims, a \$30,000 exemption and a marital deduction. Most estates under \$60,000 are not taxed.

Tax Incentives for Corporations

Among the major tax advantages available to industry are the following:

- Income is apportioned by the renowned Massachusetts formula with sales having a weight of two, while property and wages each have a weight of one.
- Expenditures for approved industrial waste treatment and air pollution abatement facilities or for approved solar wind powered climatic control or heating units are deductible in full when incurred.
- A 3% tax credit is available for investment in new or expanded manufacturing and R & D facilities, including building, machinery and equipment for taxable years 1972 through 1982. This credit also covers tangible property rented or leased from business development corporations. The credit may be carried forward for up to three taxable years if it exceeds a corporation's excise tax liability.
- A \$500 credit (Employment Opportunity Incentive) may be claimed for each additional job created in manufacturing and R & D above a normal growth factor, under certain conditions, for taxable years 1973-1978.
- The Urban Job Incentive may provide reduction of local property taxes plus an additional 25% payroll deduction of eligible payroll for new and expanded manufacturing, R & D and warehousing facilities located in certain areas within the state for up to 10 years of operation.

- Losses sustained by any new corporation in the first five years of operation may be carried forward for tax purposes.
- For tax purposes, allocated payroll remains at 1972 levels plus a 5% growth per year or 75% of actual payroll, whichever is greater. This reduces future tax liability for manufacturing and R & D corporations.
- Financial assistance and tax relief are available for resolving pollution abatement problems. These measures include a local property tax exemption; tax-exempt industrial bond financing, and optional liberal depreciation or deduction of expenditures; or 3% investment tax credit.
- Tangible property, consisting of good in process, inventory, machinery and equipment for manufacturing corporations; and of goods in process, inventory and equipment for non-manufacturing corporations, is exempt from local property taxes. (Such items are instead taxed at the state level at a uniform rate of \$2.60 per \$1000 of assessed valuation.)

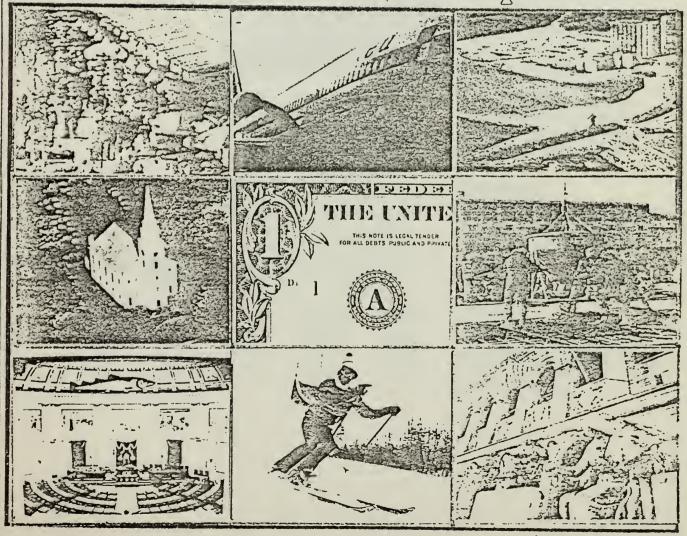
Chapter 121 A of the Massachusetts General Laws allows municipalities to negotiate 15 to 40 year tax agreements with businesses. The companies are taxed primarily on their income rather than their assessed valuation. The minimum tax due under such an agreement is 5% of gross income plus \$10 per \$1000 of assessed valuation annually A contract must be approved by the mayor or city manger in a city or the board of selectmen in a town, by the local planning board and the state Department of Community Affairs.

A 121 A agreement provides a business with a measure of certainty about local property taxes and often reduces a company's total liability over the life of the agreement. Benefits to a municipality and local community include additional revenues for the duration of the contract and a broadened tax base when the agreement has expired.

Constraints on a 121 A corporation include: limitations on transfer of the project (stock, equity, etc.); limitations on the corporation's return on capital (8%, exclusive of any management fee); the fact that only one project may be undertaken by the corporation; and the requirement that the project take place in a blighted or decadent area.

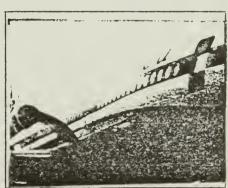


Transportation





Transportation



Massachusetts benefits from an efficient, well-organized transportation system. Its road system contains proportionally more interstate highway than any other state's. There are six railroad companies that operate over 1,300 miles of main line track. The Commonwealth has 44 airports with paved runways, and over 40% of the state's population is within 40 minutes of the loading

FUNCTIONALLY CLASSIFIED MILEAGE OF MASSACHUSETTS HIGHWAY NETWORK

| | Principal | Minor | Collector | Local | Total |
|----------------|------------------|------------------|--------------------|---------------------|----------------------|
| Urban Rural | 2,152.9 541.9 | 1,857.6 935.1 | 1,980.5 4,242.3 | 11,845.5 7,574.7 | 17,836.5 13,294.0 |
| Total | 2,694.8 | 2,792.7 | 6,222.8 | 19,420.2 | 31,130.5 |

ramps of Logan International Airport, which is only two miles from downtown Boston. Boston is also the fastest growing seaport on the East Coast: containerized freight through the Port of Boston has increased about thirtyfold since 1969. And in mass transit, Boston's was ranked the best of all major urban systems in 1976 by the Council on Municipal Performance.

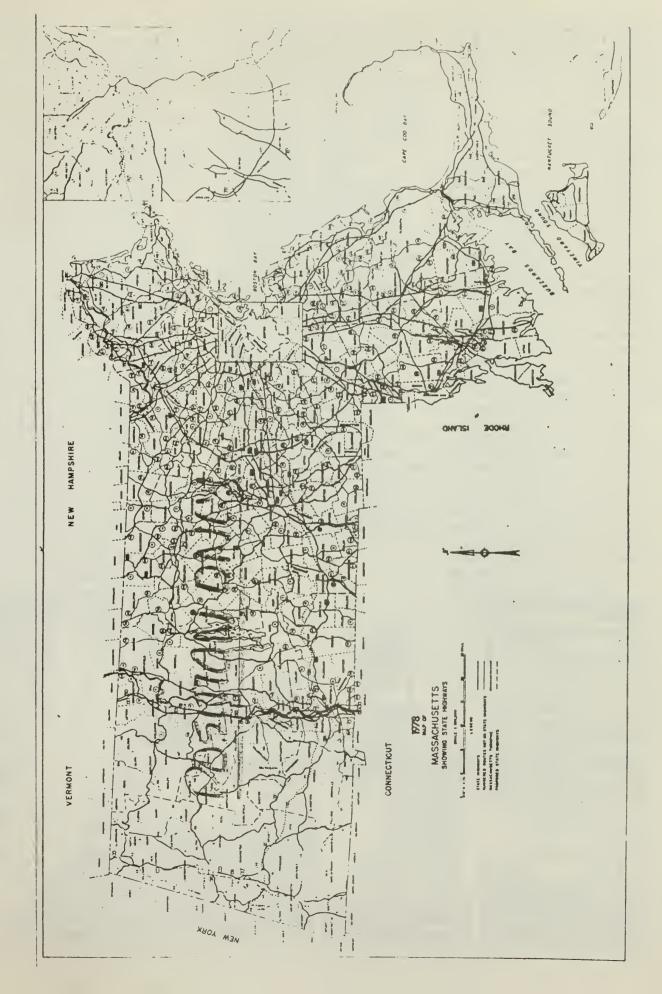
The Commonwealth's transportation network is a valuable resource to industry. The recent integration of planning objectives and processes will help to insure responsible policymaking and balanced growth in the future.

Highway

Massachusetts' 31,130 mile highway system is extensive and well-suited to the Commonwealth's present traffic needs. The emphasis in the future will be on upgrading the existing system rather than expanding it, as little additional mileage is required.

At present, the highway system accommodates about 96% of the person travel in the Commonwealth in private automobiles, and an additional 2-3% in buses.







Raili

Massachusetts policy is to preserve and improve existing rail freight and passenger service throughout the commonwealth where existing and future needs dictate this service.

The backbone of freight transportation is provided by an extensive railroad network within the Commonwealth with mainline connections to other parts of the U.S. and Canada, and with major segments of this network under rehabilitation.

The largest of the six carriers operating within the commonwealth is the Consolidated Railroad Corporation (ConRail) which serves all major cities and towns in the southern half of the commonwealth. The northern half is served by the Boston & Maine (B&M) Railroad, while the Central Vermont (CV) serves a north-south corridor in west-central Massachusetts. The Providence & Worcester (P&W) Railroad provides service in east-central Massachusetts. The Grafton & Upton (G&U) and Fore River Railroads (FRR) serve areas of eastern Massachusetts.

These railroads form a competitive network of core routes with an extensive feeder or branchline system. ConRail and B&M provide competitive service on east-west traffic movements while competitive north-south traffic movements are provided by the CV and the B&M. Branchlings of ConRail the B&M and the

P&W feed traffic to these mainline routes, while the G&U and the FRR act as feeder lines to the core system.

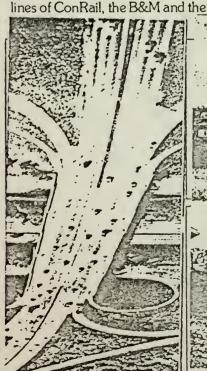
Carload traffic provided by all six railroads while Trailer on Flat Car (TOFC) and Container on Flat Car (COFC) are available from ConRail, the B&M, and the P&W. The CV will soon inaugurate high speed TOFC service between Canada and Massachusetts markets.

Major segments of this network are being rebuilt, which will soon be reflected in more reliable and faster service. The railroads have internally funded many programs, the New England Regional Commission (NERCOM) has provided over \$3 million over each of the last three years for the New England railroads and ConRail has federal financing available. The results of all these efforts have been spectacular: Con-Rail has rehabilitated many of its lines to conditions not seen for decades. The B&M has a rehabilitation effort underway that has brought tie and rail renewals to levels last reached in the mid 1950's; the P&W has rehabilitated lines. increased clearances, and expended its yard facilities at Worcester; the CV has improved line clearances needed for TOFC service: the G&U has benefited from a grade-crossing program; and the FRR has plans for

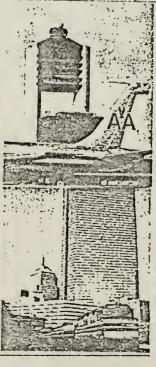
a major relay installation. Thus, the railroads within the Commonwealth are becoming better able to provide the fast, reliable service demanded by industry today—as well as for the future.

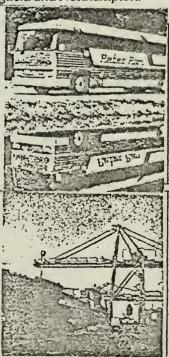
Furthermore, the Commonwealth has committed itself to a policy of maintaining railroad service whenever warranted. A demonstration of this policy was the decision to continue railroad service, under a subsidized operating agreement with ConRail on 85 miles of lines that were not included in ConRail The Commonwealth was thus able to continue railroad service to 39 active railroad customers moving more than 2,400 carloads with ConRail gross revenues of \$1.4 million during the first year of operations. Service has continued to these accounts, and the number of rail users has increased more than 10%. A \$3 million rehabilitation program began in 1978.

Commuter and intercity passenger services are provided within the commonwealth. The commuter service radiates north, south and west from Boston and is described in the mass transit section. Intercity service is provided by Amtrak on the northeast corridor from Boston to New York, Washington, D.C. and points south and west from Boston to Chicago on the so-called "inland route;" from New York to Montreal with stops in Massachusetts at Springfield and Northampton.

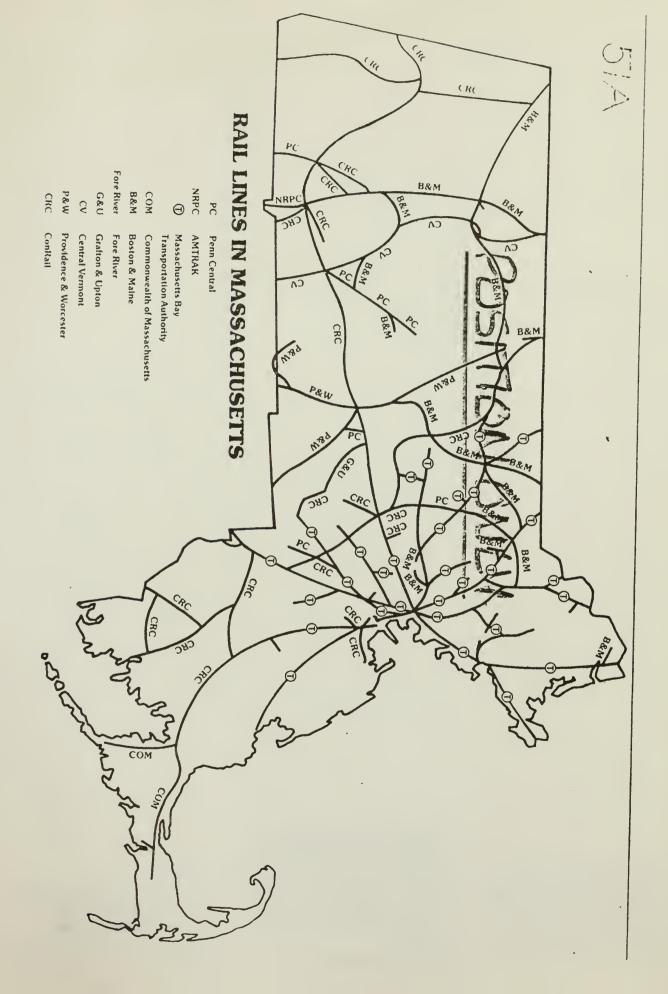














and 414 million pounds of cargo and mail were transported in and out of the airport. Logan International is served by 30 international and domestic lines, scheduling 635 flights doily, with direct flights to over 200 foreign cities.

Worcester.

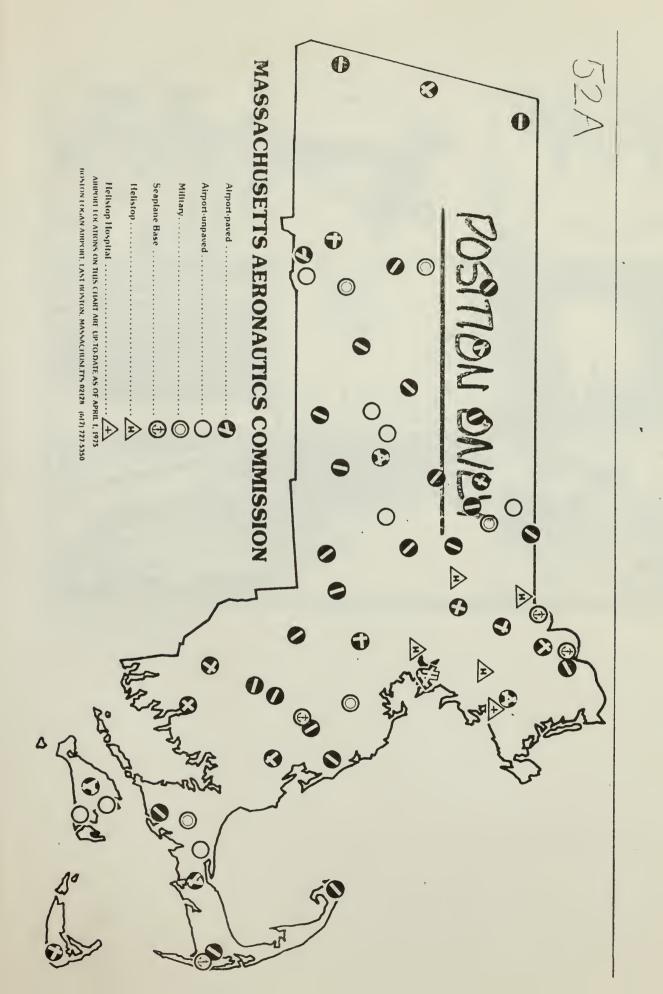
Logan International is one of the world's busiest airports, and is closer and more accessible to the metropolitan area which it serves than any airport in the United States. Logan is only ten minutes from downtown Boston. In 1976, 11.4 million passengers

Nantucket, Provincetown and

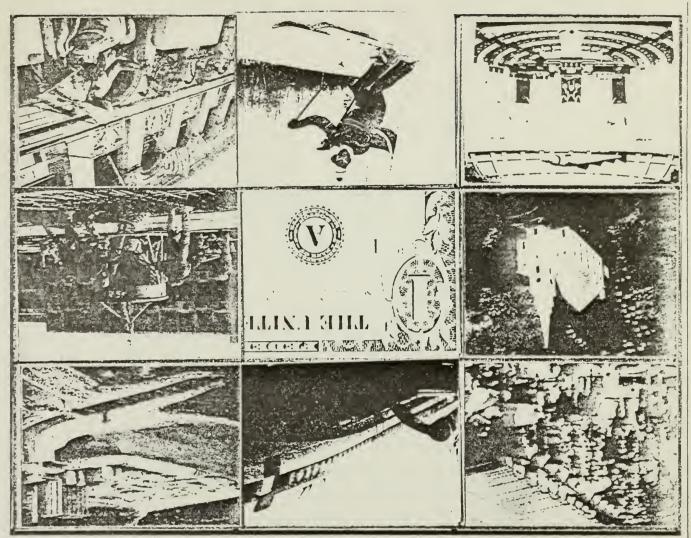
passed through Logan International

Massachusetts has 131 public and private airports, of which seven are served by scheduled air camer service. They are Boston's Logan International, New Bedford, Hyannis-Bamstable, Martha's Vineyard,



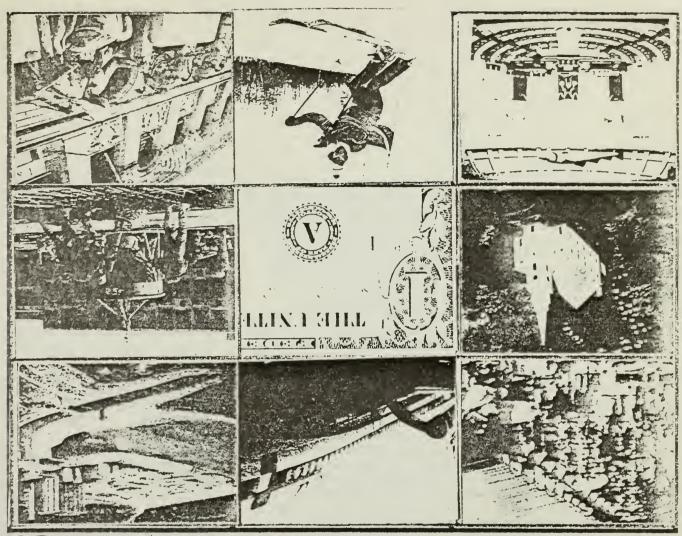






ENEIGH

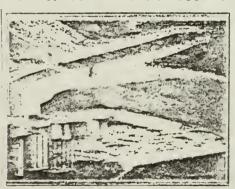




REMORIGIA



ADIOUS!



by 1984, while the rest of the United States will have nearly to double its generating capacity. Thus, Massachusetts will have to add far less high-priced electric plant and equipment. It is becoming increasingly clear that the era of cheap and abundant energy has ended. Massachusetts has lived with this realization for a long time, and has already developed sensible approaches for dealing with the problem through conservation, long-range planning and resource long-range planning and resource development.

Finally, Massachusetts' heavy ment credits for business. solar program includes solar investtechnology. Massachusetts' advanced sive, particularly in the area of solar energy sources is ongoing and extengas prices. Research on alternate make up a large portion of natural position, as transportation costs shore gas may enhance Massachusetts' gram. The possibility of nearby offwell underway with its nuclear proposition. The Commonwealth is also will, therefore, find itself in a favorable to meet air quality standards, and urbanized, is already being required Massachusetts, which is highly Act, their energy costs will rise. But torced to comply with the Clean Air nuclear power. As other regions are for greater utilization of coal and In addition, federal policy calls

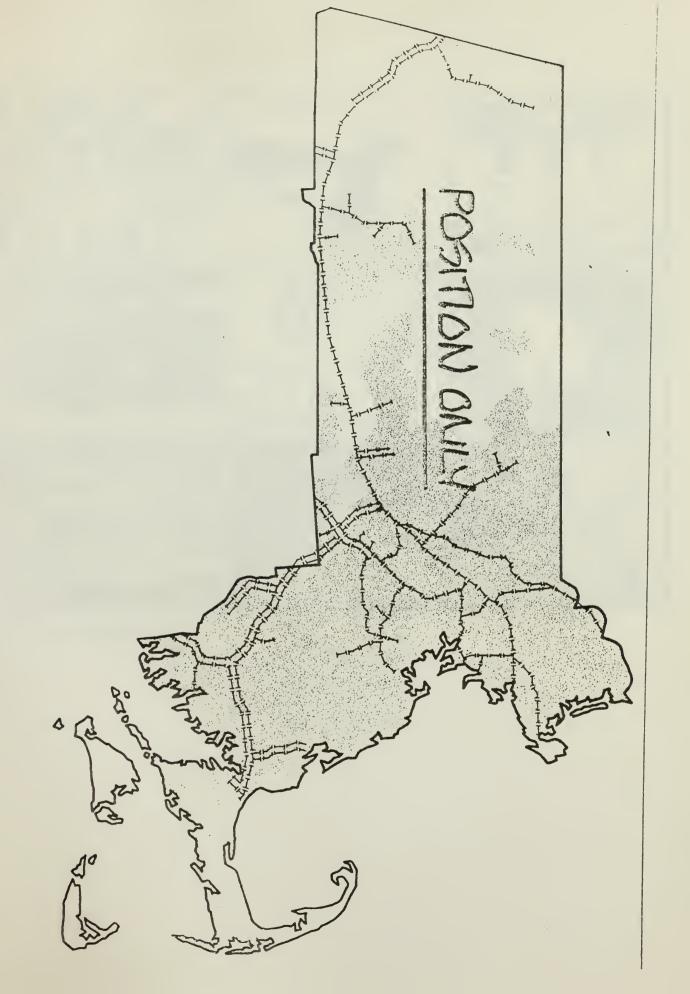
investment in electric generating capacity, which has added to its energy cost burden in the past, is becoming a significant advantage. It is estimated that New England faces is estimated that New England faces only a 42% increase in peak demand

are forced to convert from gas to use natural gas. As utilities elsewhere a small percentage of its employers unaffected by these cutbacks, as only sachusetts has been relatively tailments to industrial users. Maswhich has resulted in severe curconstrained throughout the country, situation is becoming more and more tion. Further, the natural gas supply would eliminate this price discriminaallowing market prices for gas, which ment is clearly moving towards Massachusetts. The federal governreason for higher energy costs in rather than gas has been the major its energy cost disadvantage. suggest that Massachusetts will shed imminent reversal of this trend, and oil. Several factors indicate an heavy reliance on high-priced fuel natural gas, and its consequently access to low-priced, regulated the region's inability to have equal tor a long time, uncompetitive due to Energy costs in New England were ized areas of the commonwealth. -leintsubni bne bateluqoq ylasnab ile natural gas transmission lines service throughout Massachusetts, and Electric power is available to industry

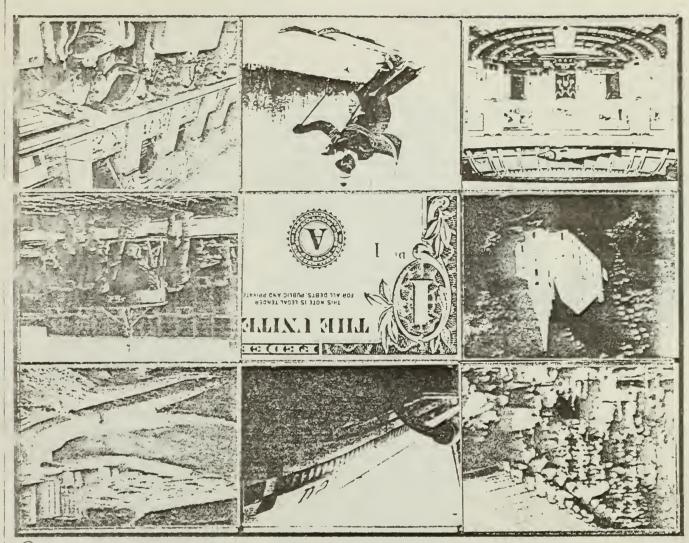
increase.

alternate fuels, their costs will









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Commonwealth, including the Paul Revere House on Boston's Freedom Trail, Old Sturbridge Village, a recreated New England town which includes 36 exhibit buildings, the Old Manse in Concord, where both Ralph Waldo Emerson and Nathaniel Hawthome lived and the New Bedford Whaling Museum, to name just a few.

recreational opportunities. For those attracted to coastal areas, there are nearly 2,000 miles of sea shore, including the shores of Cape Cod, Martha's Vineyard and Nantucket. There are 36 ski areas, and 294 golf courses, including the Pleasant Valley Country Club at Sutton, site of the annual Pleasant Valley Pro-Am annual Pleasant Valley Pro-Am

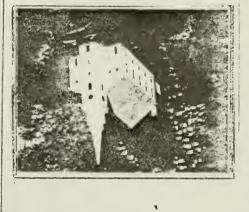
Some of the best professional athletic teams are found in Massachusetts. Major league baseba!!, football, basketball, hockey and tennis teams are located in Boston. And thoroughbred, hamess and dog racing are held at five different tracks in Massachusetts.

Because Massachusetts is so compact (the sixth smallest state in area), all of its attractions are accessible. From the state's geographical center, no point is more than three hours' driving time away.

Boston is the center of much of the cultural activity. The city is the home of the Musuem of Fine Arts, the Boston Public Library, the Boston Symphony Orchestra (which, with the Boston Pops, performs in one of the world's truly outstanding concert halls), the Opera Company of Boston Ballet Company. Boston's thestrical community is becoming the subject of renewed interest—Boston is now the fourth largest 'road city' in the country (after Chicago, Los Angeles and (after Chicago, Los Angeles and

Cultural life flourishes in other parts of the commonwealth as well. The Worcester Art Museum has 42 galleries, containing collections ranging from pre-Columbian to twentieth-century American. In Western Massachusetts, Tanglewood at Lenox is a 210-acre estate famous as the summer home of the Boston as the summer home of the Boston and the Berkshire Music Center. and the Berkshire Music Center.

attractions of historic interest than any other state. There are 500 historic houses and museums in the



Few states, if any, can match
Massachusetts for its livability and
quality of life. In addition to its superlative educational network, and its
medical and health care facilities,
which are among the finest in the
world, Massachusetts offers innumerable cultural attractions, historic
sites and recreational activities.



